

CORNISH MINE PHOTOGRAPHS—No. XVIII.

“THE BAL BOY.”

No apothegm in the English or any other language is more trite or true than that “One half of the world knows not how the other half lives.” Little does the child “born with a silver spoon in its mouth” heed or care for him that is born with a wooden ladle. There always have been brawlers of wood and drawers of water, and will be to the end of time: it is one of the conditions of our existence, but that does not alter the relative duties of the one towards the other. If the Almighty in his providence has seen fit to raise one star above another in glory, they and we have each our relative duties to fulfil: it will surely be required of us how we have managed the talents, and taken care of our trusts.

We are by no means maudlin philanthropists, or Exeter Hall declaimers on the horrid enormities perpetrated on black slaves at home and abroad; nor are we sentimental juveniles or piously inclined young ladies, so graphically depicted by our facetious Fleet-street contemporary. No! we are made of sterner stuff, or we should not have witnessed the scenes we are about to describe: we are of the masculine tribe; still we deem sympathy with the weak and innocent no disgrace, but, on the contrary, a cardinal duty, the neglect of which is a venality. Our tale is brief; we claim but a few minutes, and the poor little objects shall speak for themselves, and declare their own tale of woe.

The “bal boy” is the term usually given boys when they first go to work on a mine: they are usually placed on the dressing-floor, where they are taught to sort the various ores, so as to know them at a moment’s glance. On some of the larger mines, scores of boys and girls may be seen at this employment, selecting the different metals with surprising rapidity. Boys are then taught to budle, jig, and prepare the ores for market. In tin dressing, more particularly, they are exposed to almost constant damp. In budling, their bare feet, and legs as far as their knee, are continually wet. Until lately but few mines had even sheds to cover them from the weather. They were then almost continually drenched to the skin during the winter and spring months. After being taught the dressing process they are usually sent underground—at the age of 14. To this we see no objection, at this age their persons being sufficiently matured; but we do and will protest against children being allowed to be sent to great depths at an earlier age.

Being underground lately in many of the deep and extensive mines of Illogan, Gwennap, and Redruth, our heart ached to find so many poor children, of much earlier age, being deliberately murdered (we can use no milder term) to save or earn their parents a few shillings a week. At a depth of 145 fms., 870 ft. from surface, and up in a rise, a place very like an oven, and to gain which the miners and ourselves experienced considerable difficulty, we found a poor little pale, wretched child at work, when the following Cornish colloquy took place:—“How old is t’ me son?” “How old am I, Sir? [a miner invariably echoes your first question] why I shall be ten year old come next birthday.” “How long have ye worked underground?” “How long have I worked underground? lemme see, better than two year, and worked here all the time.” “Who’s thy father, then; what do they call’em?” “That’s my fayther,” pointing to an old man in the place. We then questioned the father as to his own age, which he said was 36, he believed, but he could not tell. He could not read or write; he went to chapel every Sunday, when it wasn’t his turn to watch the mine. He appeared to be 60 at least, and we found he had been sent underground at ten years of age! On remonstrating with him for bringing a child of such tender years to such a tremendous depth, and to such an atmosphere, 98 degrees, and with highly sulphurous and arsenical, from the peculiar minerals being raised, the father acknowledged he knew it was bad enough—“For,” said he, “when I was a boy myself I have many times had a mind to lay myself down on a pile of ore and die, after a hard day’s work, and then to climb 200 fms. to grass, loaded with borers; and I did once fall asleep in the levels, and when I waked my candle was out, and there I was, forced to wait till somebody came to see for me. But what can a body do now, Sir? Them buddling and trunking machines have near done away with boys at surface: besides, he saves me a pound a month.” So, there was this poor child, created in God’s image, sacrificed to the idol Gain, and for such a paltry sum!

We found this to be by no means an isolated case. In one place, at the bottom of a very wet shaft, was a poor little fellow, holding the borer whilst a youth about 18 or 20 was hammering away at it with the strength of a Cyclops. An error or false blow on his part would probably break the child’s arm: the slightest neglect of duty of the poor little fellow would be sure to entail a box on the ear from his companion. We soon found from experience that this was a dreadfully cold and wet mine, ten minutes sufficing to saturate our clothing, penetrating to the very skin, though of far superior quality; whilst the rags in which the miners were arrayed afforded but a mockery of protection. On enquiring of the child how long he worked, he replied—“Six hours, Sir; and long enough, too, Sir.” To which we yielded a candid and ready assent. Poor little fellow! six hours in such a situation, and then to have 110 fms., or 660 ft. (the depth he was working in) perpendicular to climb on ladders, the steps of which were 10 and 12 in. apart, to overcome which an amount of physical labour must be expended truly frightful to contemplate—known only to practical experience or surgical professors. Yet this is the fate of hundreds of children not more than eight years of age! No wonder the gravestones bear the early dates they do—no wonder miners’ consumption is prevalent—no wonder ignorance prevails! After such a journey, and such work, can children be expected to give much attention to learning to read and write—can they be supposed to take that recreation so necessary to childhood and boyhood? Is it any wonder that they associate, as they do continually, with men, become premature in their tastes and habits, contracting many they can never again abandon—can it be a matter of surprise that we see boys idling away their time listlessly, with the horrid pipe stuck in their mouths?—No; certainly not. As long as childhood be permitted to be employed in such situations, so long will these evils prevail. It calls aloud for remedy, but there has been no one to advocate their cause. Mammon stands in the way, and he is an all-powerful potentate. Why should not the protection afforded the cotton-spinner be extended to the poor little “bal boy”?

The Pantheistic theology of the Greeks and Romans, if carefully studied, seems evidently to have been derived from the circumstances of mankind, and not designed to suit or improve them, as is Christianity, if its principles be carried out, and hence the evidence of its divine origin.

Had the ancients sought out gods to personify the principles involved in the practice just detailed, could they have selected more suitable types than their Plutus and Pluto? The former is the god which rules supreme in the minds of those who permit such atrocities to exist, and the latter the demon that prompts, and to whom these poor wretches are heedlessly consigned, so that they but help to support the golden throne of the former. We see that the allegorical representation is perfectly true to nature, still we should have thought the more sublime systems would have removed the adoration still paid to such idols. It would have been supposed that in this land of Christianity, where charitable institutions (to its honour) exist almost without a number—where countless temples of the various sects arise—where towers and steeples bristle, the service of these gods would have been so far expunged as to have prevented the immolation of little innocents on their sordid altars. Shame on mankind—shame on their institutions, that such things are permitted, even by parents, whose necessities should not even be allowed to plead as an excuse. Our blood boils with indignation, and our heart bleeds with sympathy! They are as surely murdered, body and soul, by a quiet, subtle, unseen process, as the poor innocents who have been bayonetted by the cruel Hindoo. But because it is at home, and is gradual, it is not noticed: still it is not the less true. We do not mean to condemn or infer that child labour should not be employed—for from it; but let child labour be suited to childhood, and not exercised in a profession dangerous to the skilful and experienced; but cruelty itself supervened when children are compelled to go to such depths and such horrible holes.

Considered in a social point of view, can we be said to be doing our duty to ourselves and to society in allowing such things—can the rising generation be expected to be what they ought and should be—can they ever fulfil the high calling whereto they are called? Can we, when called upon to give our great account, render a just one of having done our duty, neglecting this?

We are no orator, but had we the philanthropy of a Wilberforce, poetry of a Cowper, persuasive eloquence of a Peel, or the power of a Palmerston, our charity would be excited, our page would be graced with harmony—our voice would be raised, and our power exerted—aye! all combined should never cease their action, until this foul spot should be wiped out for ever, and these poor children enjoy that blessing which is their natural

birthright—free air and proper exercise during their tender years. Why should not these privileges be extended to mines as well as to factories? On enquiring of the village schoolmaster, I found him a good man, bitterly lamenting that he could not get the children to school; and even if they were sent their attendance was so irregular that he could not do any good. “It will never be any better, Sir, until it is stopped by law; for if parents can get a penny out of their children they will send them anywhere.” We appeal to the humanity that has so successfully exerted itself in the cause of the sweep, which of the two is the greater evil—the ascent of a few yards in a chimney, or the descent of hundreds of yards, and exposure to wet, with a foul atmosphere and hard work for six hours, then the frightful job of ascent, ere the poor child obtains his scanty meal and wretched bed? We think we hear it said—Can such things be? We answer, yes! we have painted but two as samples, thinking they are sufficient; they are but types, but they are facts patent to thousands. But use makes all things familiar, and use has rendered people as callous as sellers. But cels have feelings, though they be skinned daily, and these poor bairns have bodies and souls!

And now, O ye fortunate sons of Nature! ye who were born with the “silver spoon,” come forward—recollect your brethren of the “wooden ladies;” and thou, O fair goddess, Humanity (she is no idol)—we invoke ye all—come forward, assist in the good cause; your countenance alone will be of vast avail; come forward and show the world that, though “One half of the world knows not how the other half lives,” you have charity and Christian fellow-feeling, when you do know, to assist those who have no power to help themselves—to come forward and deliver them from their tribulation and oppression. Remember the words of your Divine Master, “Suffer little children to come unto me, and forbid them not, for of such is the kingdom of Heaven.” Act on this precept!—GEO. HENWOOD.

MINERAL WEALTH OF IRELAND.—No. I.

BY A MINING AGENT.

Much has been said from time to time respecting the industrial resources of Ireland. The pen of the philosopher has been active in drawing from its resources, and the ardour of the philanthropist—such as Profs. Kane, Smyth, and others—have not been silent in attempting to show the natural products of the land, thereby inducing capitalists to embark in developing its resources. Some have devoted themselves to the linen and other manufactures of the North; others to the great staple produce of all nations—agriculture; but few have attempted to lay before the reader a clear and well-defined statement of what has been done in developing its minerals, a subject that demands the attention of every well-wisher of this portion of the United Kingdom, and the nation in general; for unless the minerals of any kingdom are raised and applied to manufacturing purposes, that kingdom will never rise to that state of activity to which it is destined by the Creator. Irish mining has long engaged the attention of the *Mining Journal* and other papers devoted to industrial pursuits. Sometimes we see such expressions as, “Mining don’t pay;” that “Irish miners are not lasting,” and so forth. Much of this doubtless arises from ignorance, or from a want of the necessary data whereby to form an opinion; as, if the real facts were known, and a full statement of profits could be procured from every company working mines, results could be shown that would astonish many of her friends, and show that mining has been a good paying and profitable investment in this country. Comparisons are odious; we will not, therefore, attempt to draw one between Cornwall and Devon and Irish mining, though we are aware it could be done with credit to the latter; but would prefer that Irish mining shall stand upon its merits, and that facts adduced from existing mines shall show its value and importance. The northern portion of the country is little known as being productive of minerals: to this we purpose devoting our attention at present.

The minerals found in the North have been principally lead, coals, and iron, with salt. These are scattered generally throughout the different counties, but the county Down has been the most productive of lead. The stratification of the eastern sea board of this county is silurian, or what is commonly called clay-slate. This exists throughout almost the entire portion of the north-east; about the middle and southern parts the granite hills of Mourne come in; and in the north-west the sandstone formation, adjoining Belfast. The clay-slate north of the romantic Mourne, and beginning at Newcastle, is of a light blue colour, generally compact, and congenial for producing lead ores. A great number of mineral lodes have been discovered in this formation, ranging from the Mourne to Belfast Lough. The principal one wrought upon has been at the Newtowndale Mines, which lie between the town of Newtowndale and Bangor. These mines have been working for about seventy years, and are sunk 200 fms. deep. They comprise several mines, and have been wrought with great spirit. The exact returns cannot be obtained, as they have been in the hands of several companies, but it is well known that about 85,000 tons of lead ore (galena) have been sold from them, which produced above 175,000 tons, and left a profit to the company within that time of nearly 35,000 tons. The vein in this mine is very large, producing a small quantity of water, and requires but small steam-power. In consequence of this being a private company but little is known of their operations. Several other lodes exist in the locality, and lead ore has been found generally scattered over the district, but no trials of any extent have been made. Several small mines have been wrought between the Newtowndale and the granite hills—one at Castleward, near the residence of Lord Bangor. This mine is sunk 10 fms. deep, and a level opened upon two lodes but a short distance; yet from this small working from 50 to 60 tons of lead were raised, which very nearly paid the expense of working. This is a most promising mine. The ground in this locality is a very beautiful light killas; the lodes have been very productive, and upon the sea shore are found large boulders of lead ore, doubtless coming from the back of mineral veins; and yet with such prospects the mine is remaining un-worked, though it holds out such prospects of success. Southward of this can be found many mineral veins, all containing lead ore; and at Rathmullan and Dundrum very large veins exist, none of which have ever had any trial of consequence. Passing south of Newcastle, at the base of the Mourne, a great change of stratum occurs, and the clay-slate becomes much lighter in colour and softer in nature, reminding one of the killas of Gwennap. In this stratum are found veins of copper, producing sulphurates and carbonates, and even the glens running up the hill sides are marked with green carbonates; every stream, in fact, shows it by its copper-coloured water. No trials whatever have been made at the base of the Mourne Mountains, though the indications are so inviting; and as the great deposits of minerals generally are found in the clay-slate at the foot of granite hills, yet in this instance the explorer has never put into operation any movement to develop the ores of this portion of country.

Passing from Down to Antrim, we meet the sand and limestone formations in the south and east of the latter county, the north-eastern being the basaltic range, so romantic and beautiful in its form, as seen along the coast, and at the Giant’s Causeway, with its tens of thousands of pillars.

At Dunrue, near Carrickfergus, the Marquis of Downshire, a few years ago, commenced a trial shaft in search of coal, and when about 75 fms. from surface, a large bed of salt rock was passed; the shaft was continued through the deposit until it reached 90 fms., where the bed of salt terminates. This mine is now being prosecuted with great vigour by the Belfast Mining Company, who, in addition to working the mine at Dunrue, have erected very extensive salt works at Belfast, where a large quantity of salt is manufactured; in addition to which a very extensive export trade in salt and salt rock is carried on, much to the advantage of the port and trade of the town: 500 tons of salt per week is at present raising, but as the manufacture of that article is extending in Belfast and the North of England, where coals are so plentiful, it is expected that quantity will be materially increased. The works are now in that state of efficiency that 2000 tons of salt rock could be easily raised weekly. Lord Downshire is still searching for coal nearer the shore than Dunrue, but, we fear, without much chance of finding any; however, “freaks of Nature do occur,” and we wish the worthy marquis every success. He was the cause of discovering the salt, that is giving employment to so many, and, if he succeeds in coal, a stimulus will be given to the locality (already studded with spinning mills and manufactories in abundance) not easily described.

Following our course around the seaboard we reach Ballycastle, where iron and coal mines were worked by the ancients, but not in the memory of the present generation. This deposit is thought to be a continuation of the Lancashire and Ayrshire coal and iron bed. An English Company have taken up the district, and commenced operations to work for iron and coal. The situation being so near a harbour, is very advantageous

for carrying on a large export trade, which we have little doubt will be the case, when the mines are properly developed.

Having explained the mining operations in the counties of Down and Antrim, we think we can say with complaisance it has been a very successful and lucrative business; productive and profitable lead and salt mines, and other promising mineral property, having been already discovered; and all show that mining in the north-east can stand upon its merits, and, when compared with other means for the employment of capital, is equally as remunerative. Much, however, remains to be done he county can scarcely be said to have been proved at all, as only a few trials have yet been made, whilst the field is large and inviting.

Original Correspondent.

“SLEICKENSLIDES.”

SIR.—I have delayed making any observations on this subject for some time, for the reason only that my views of it were at variance, in some measure, to those of such distinguished authorities as Evan Hopkins, Lisabé, and Ennor. Mr. Hopkins kindly stated that he had seen them in granite; I would not differ from him in this opinion were I not compelled to do so. Mr. Lisabé generously and properly corrected me in the spelling of the word, giving it the true pronunciation. Not being a German, I may be pardoned the error; and my friend, Capt. Ennor, volunteered his idea of their cause. To all these gentlemen my thanks are due, and they have them. To Mr. Lisabé I can say no more. To Mr. Evan Hopkins I shall offer no apology, as he can and will afford to bear with such as myself when we differ in opinion, and show reasons for it. Now, Mr. Hopkins said, in his advice to me, that he had seen these phenomena in granite, having visited several deep and extensive mines near Redruth in that formation, amongst them South France, Penestrath, Treavean, and others; and to satisfy myself on a peculiar theory of my own, I believe, as to the nature and formation of evans, I have made a searching survey of all the granite quarries of Constantine, Mabe, and Stythians, which have occupied several days. I have conversed with the quarrymen, with the clever captains, and with the intelligent miners, and on the enquiry, “Did you in the course of working ever meet with a ‘sleickenalides?’” (I drop the German to them, and use their own language, to be better understood.) “What do you mean, Sir? A hard polished wall, bright with mineral, like as if it had been rubbed?” “Yes, that is what I want.” “I never saw one here,” was the invariable reply. “I have seen them in slate, but never in granite.

When underground with that great miner, Capt. Pascoe, I called his attention to the subject. In his mine, and at Penestrath, are slides in the granite; these are very extensive dislocations, with smooth surfaces on them, and bright, but not “sleickenalides.” Not having a copy of the Journal with me, I do not know the exact mines to which Mr. Hopkins refers, but I know it was to this neighbourhood. Now, I happen, perhaps, to be much better acquainted with this locality than Mr. Hopkins, as I, in my earlier days, was employed in this very part, South Dolcoath, or “Bawden’s Bal,” being the first mine in which I made my *debut*. Afterwards Treavean was my post (I rejoiced to see my dear old captain at Stythians, a few days since, recovering from a terrible attack of typhus fever), but I confess I never met with a true “sleickenalide” myself, or saw any one who had in the granite. I conversed with that “true philosopher,” Humphrey Champion, and he agreed with me that he had never heard of such—that they were confined to the clay-slate and upper formations. To illustrate the subject more fully, he produced and presented me a beautiful example from East Wheal Rose, which we discussed. I called his attention to Mr. Ennor’s idea of the cause, when we (with all due deference to so eminent and positive an authority) differed from it, as we could not for the life of us see how his theory could possibly be correct—that it was occasioned by the rubbing of one wall against the other—that the lustre was to be attributed to the attrition, and offered an example of a shot wheel passing rapidly, when heavily laden, over a road or frost. In this theory Mr. Evan Hopkins appeared to coincide, at all events admit. Now, Sir, these conditions do not satisfy my mind. I have in vain sought for the “shot wheel;” I have in vain sought the metal mark not mineral, to slide and give the lustre. I opine that, had it been produced by such causes, they would long since have been corroded by oxidation or decomposition. I have carefully examined several specimens, and have failed in every instance to detect metal, the greater part, under microscopic observation, being iron pyrites. To account for the lustre, or some of those beautiful crystals polishing each other, would appear to me quite as reasonable as to account for “sleickenalides” from such a cause. In a few days I shall be in the region of “sleickenalides,” where scores may be seen at surface, when I shall devote some attention to this subject, which I have heretofore given, and communicate to you, Sir, the result of my labours. In the meantime, let roughs polish roughs; I enjoy the good opinion of such men as Ennor, Hopkins, and Lisabé, and will, I trust, never do anything to alter this; but at the same time I enjoy I covet their opinions when they differ from mine, as it then becomes my duty to prove the correctness of my own views, or become a convert to theirs, which I will readily do when I find I am wrong.

I do not wish to create a paper war on the subject, but it is one so little understood by “practitioners” even, that no wonder theorists are at sea. This interesting, and I hold instructive, page of geology has been studied by many, but not half read; the A & C has not yet been got over; I believe them to be indeed little understood, but of thisanon... I hope the three of Nature’s philosophers will take these observations in good part; but I know they will; why do I doubt?—*verb. sap. sat.*

Godwin, Oct. 22.

FIRE-DAMP IN MINES.

SIR.—Not having an opportunity of replying last week to the letter of “Chemist” in your Journal of Oct. 10, I beg to claim a portion of your valuable space to make a few remarks on the explosion of carburetted hydrogen.

“Chemist” appears to class me among those in a dangerous condition from “little learning,” but his letter would go to show that he belongs to the harmless ranks of those who have not tasted the “Pierian spring.” All that he has got to say for himself or Mr. Rogers is, that the only possible products of the explosion of 5 vols. of carburetted hydrogen and 40 of air are those given by the author of the paper on Fan Ventilation, and challenges me, if I deny this—which not only I, but all chemists correctly so called (and not that class ridiculed by Liebig, the chemists who append “and druggist” to their professional titles, to which species I apprehend our friend belongs), do most emphatically—to show what are the products of such explosion.

“Chemist” having made a positive assertion, in complete opposition to the experience of scientific men, ought to bring forward some proof that he is correct in his views; but not being able to do so, he throws on me the onus of demonstrating that he is in error. Your readers will not, I think, require any such demonstration, but I will endeavour to enlighten “Chemist” on the matter, although I doubt not it will be difficult to convince him that he is labouring under a mistake.

It does not seem to have occurred to him that a given volume of carburetted hydrogen requires an equally determined volume of air for its explosion; and that, if this quantity is not present, a portion of the carburetted hydrogen will remain undecomposed; and this will undoubtedly be the case in the proportion stated by Mr. Rogers, there not being sufficient air to convert the whole of the carburetted hydrogen into carbonic acid and water; and, consequently, a portion of the explosive gas will remain in excess. If “Chemist” will try the experiment, he will find that it is so, and that free carbon is never produced by the explosion of carburetted hydrogen in air, be the proportions whatever they may.—Oct. 23.

F. G. S.

VENTILATION OF COLLIERIES.

SIR.—It is evident from Mr. Hopton’s letter, in your last Journal, that he is not satisfied with the explanation which I gave him in mine of Oct. 3; and, moreover, he complains that he is unable to find the two letters, X and T, which are of great importance, by way of elucidating that part of my last letter which states—in fact, the question in dispute—that Mr. Hopton’s darts, as delineated in his No. 2 plan, are placed diametrically opposite to the direction which the air will traverse round the bord-gates. Now, in all the copies which I have seen these letters have been marked the same as to be understood.

Mr. Hopton has strayed very much from the question in dispute, by stating so many particulars which are literally irrelevant to the discussion—such as the comparison between his No. 2 plan and the old system employed at Land Hill Colliery; the number of men employed in getting coal in the sets or banks, and the bord-gates, comparatively—as though these had anything to do with the aforesaid question in dispute.

Mr. Hop. has again misinterpreted a certain part of my letter relative to the ventilation of the various bord-gates; for he says, “Now, if I mistake not, the meaning of Mr. Wain is this—that the air will not traverse or be carried around the workson one bord-gate as it will on the other.” How Mr. Hopton suffers himself to be deluded in this manner I know not, for the darts in my diagram are distinctly shown pointing the same way in each and every bord-gate, except the furthest, which latter one will be explained afterwards.

I am very much surprised that Mr. Hopton should so far commit himself as to state publicly that the ventilating power is not as to the density, but the furnace. Now, Mr. Hopton will perhaps allow me to give him a little explanation on this head—The furnace is placed at the bottom of the upcast shaft, to destroy the equilibrium of the two

same direction as in the other bord-gates on which I have already treated. Supposing no regulator is placed in this division, then the air would divide in proportion to the distances, the areas of course, being equal; but then I should not have the dividing of that air in my power; consequently I place a regulator in the opening next the face between the bork and the return bord-gate for H. 5, and regulate it so that I may get an equal quantity around H. 5 and across the bork.

Mr. Hopton's tract does not state whether he purposes to work the coal in his No. 2 plan with candles, and the bork with safety-lamps; however, I shall assume that he works the bord-gates with candles, and the bork with safety-lamps; if so, then the reader will at once see the misapplication of the air, in his "Improved Plan of Ventilating Coal Mines"—viz., the air, after leaving No. 1 bork (a goes where gas is generally accumulated) coming in contact with naked lights. Mr. Hopton will perhaps say that he purposes to use safety-lamps alone; even then I think I have clearly proved that his plan No. 2 will not bear a practical test, as regards ventilation.

If we are to judge of Mr. Hopton's practical knowledge of ventilation from his No. 2 plan, we must at once come to the conclusion that he has a wonderful propensity for dividing air; but may I remind him that there is a point beyond which he may go in the splitting of air, so as to render the same of no utility, but at the same time useless; and I would also remind Mr. Hopton that the proper mode of applying is even of more importance than the splitting of air, which I trust I have clearly and satisfactorily proved. In conclusion, I beg to state that if Mr. Hopton is not satisfied with the practical demonstration which I have given him upon the above subject, I will meet him at Barnsley, or any other town, to discuss this dispute publicly.

Hulton Colliery, Oct. 21.

J. WALES.

VENTILATION OF COAL MINES.

SIR.—I see from your Journal of last week that Mr. Hopton has gone to some length in his so-called improved system of working collieries, but I am at a loss how to account for Mr. Hopton not endeavouring to prove that his plans are really improvements. I see he has written a great deal, but I must say that he has never touched the disputed point between his opponent and himself.

I have enquired to know if such a person as Mr. Wm. Hopton really existed, but I am sorry to have to state that as yet I have not been able to discover that such is the fact; however, taking for granted that such a person actually lives, I beg to say that a man never did commit himself more to the ridicule and laughter of the public than Mr. Hopton has done. I cannot for one moment imagine that he can be in his "pit-matic sense" at least, whatever other valuable property his constitution may boast of—for instance, he says, "I beg to inform Mr. Wales that it is not the density of the air, but the furnace, that is the ventilating power." Now, I ask, can it be possible that Mr. Hopton is aware of what he says when he writes thus? I ask, does he understand the common rudiments of the principles of ventilation? I say, no.

I hope, after this, that he will be led to see the great delusion he is labouring under respecting improved ventilation, and also that he will see the great reasonableness there is of his sincerely thanking Mr. Wales for the great trouble which he has already taken to make him (Mr. Hopton) a wiser and better man.

In conclusion, I must add that Mr. Wales has, in my opinion, for ever set at rest the fact that "Hopton's plan will not bear a practical test," as the correctness of Mr. Wales's assertion that the darts, as shown in Mr. Hopton's plan, are pointing in a directly opposite direction is indisputable, and is very clearly and simply shown in the diagram that has published in your valuable Journal. If I were Mr. Wales, I should not contest this point any longer with a man who has already proved himself so utterly ignorant of the first cause of ventilation in mines; and would just add that Mr. Hopton would show himself a better man before the public if he were to take Mr. Wales's advice, and confess honourably that he is in error.

An Old Subscriber, and One of Experience in Newcastle-on-Tyne, Oct. 22.

THIS HIGHLY IMPORTANT PROFESSION.

IMPROVEMENTS IN IRON MANUFACTURE—UCHATIUS.

SIR.—In my last, which you were kind enough to insert, I forgot to mention that the furnaces are not completed at present at Ebbw Vale, but I should think they will be soon. In the latter part of "Sideros'" letter, he says that "Nothing but the agency of a very powerful *leas* could have conferred upon the process the gigantic dimensions which it had assumed upon paper, in the flaming accounts thereof which from time to time appeared in your columns." If there have been any "flaming accounts" in your Journal, the process well deserves them; but "Sideros'" need not have made a pun on Mr. Lenz's name.

Monmouthshire, Oct. 19.

MANUFACTURE OF CAST STEEL.

SIR.—Your highly imaginative and facetious correspondent, "Sideros," in utter ignorance of the real facts, kindly condescends to enlighten (*i.e.*) "H. K." upon the progress of the Uchatius process, and under this pretence indulges in a deal of contemptible sneering at this invention. "Sideros," however unwillingly, must utterly recant his assertions; for not only has the difficulty with the pots, which he so vividly describes, no existence, but there is no other difficulty to prevent the universal adoption of the Uchatius process, excepting the customary obstacles of prejudice and ignorance, which attend the introduction of all new and great discoveries.

If "Sideros" will pay the terms asked for a license, he will be taught how to make Uchatius steel, without any of the bungling, and consequent failure, which has doubtless led him thus to "rush into print" against the practice with reckless assertions, which are entirely without foundation. If your correspondent is a steel-maker on the old plan, he need not be impatient at the delay in introducing the process; he will hear of it quite soon enough for his interests and prices.—*Oct. 21.*

STEEL MANUFACTURE.

SIR.—"Justitia" has seen some of the Potsdam steel at Ebbw Vale Iron-Works, and he thinks it is good. I shall be very glad if he can put me in the way of purchasing some of the very successful product in bars for mill chisels, $\frac{1}{2} \times 1 \frac{1}{2}$ inch, made from British coke pig-iron. I will purchase 50 tons, at 60/- per ton, and give "Justitia" 10 per cent. commission. It must be guaranteed at least equal in quality to average Sheffield cast-steel used for mill chisels.

From Mr. Roper's extensive scientific and practical knowledge of iron and steel generally, and from the indomitable energy and decision which he exhibits in all practical matters, the happiest results are foreshadowed. Sheffield shall never boast her monopoly of the steel manufacture whilst we have a Roper to give an impetus to competition. Though not himself a true-born Cymro, there is no doubt that the "Awen" of the sons of Gomer will possess his breast, and "Morganwg iaw o wng Cymri" shall boast of his achievements. History shall record, and posterity shall read, that about the middle of the nineteenth century, Roper—the admirable Roper—made cast-steel as plentiful as puddle-bars, and so astonished the nations that the King of Prussia signed the teetotal pledge, and kept it for a week.

SIDEROS.

ON THE TRIAL OF PATENT CAUSES.—No. XV.

HEATH'S CASE (CONTINUED).—JUDGMENT OF THE EXCHEQUER CHAMBER.

ALDERSHAW B., COLERIDGE J., WIGHTMAN J., ERLE J., PLATT D., CROMPTON J.

The result of this appeal was a reversal of the judgment in the Common Pleas, or, more properly speaking, that of the Court of Exchequer; for the judge in the Common Pleas felt himself too much bound by that decision to do otherwise than adopt it, in the absence of additional evidence making the case different.

It will be remembered that the decision of the Court of Exchequer denied that the use of the elements of carburet of manganese was any infringement of the patent, although carburet of manganese was formed before it entered into combination with the steel. This, in effect, denied that the patent covered the use of carburet of manganese in an unlimited sense, but only in the limited sense assigned to it by the Court. Now, the present decision (of the Exchequer Chamber), on the contrary, affirms in effect that the patent covered the use of carburet of manganese without limitation.

But the judges were not unanimous on this point: it was only settled by a majority. Four of the judges decided that the specification included the use of carburet of manganese in any form, and two decided that the document did not include its use in an elemental form.

Now, for my present purpose, it is not necessary for me to notice here the opinion of the majority of the Court: I shall, therefore, confine myself to a few remarks on that of the minority, so far as relates to the special ground of such opinion. This ground was that, assuming the specification to be unexceptionable, it could not be held to cover anything that was not, at the date of the patent, in the mind of either the patentee or persons acquainted with the subject matter of the patent. Accordingly, assuming that Heath's specification claimed the use of carburet of manganese without limitation in *terms*, it could not do so *in fact*, because it was necessarily limited by the knowledge of Heath and other competent chemists, which did not at the date of the specification reach the point of establishing that the use of the component elements of the material would answer the purpose described in the specification, with reference to the material itself. One judge said:—"This limitation seems to me to be required by common sense and common justice." But it is unexceptionable and unfair to the public to hold that a specification may cover something not known at its date to the patentee, nor to those to whom the specification is in law supposed to be addressed! I venture to think, *not*. Assuming the claim in the specification to be unimpeachable on the ground of want of novelty, and to be intelligibly expressed, it conveys to the public some additional information of more or less practical value. And Patent Law gives an inventor a right for a limited term over that which he thus gives to the public. It does not give him the power of appropriating the inventions of others who may come after him, and give the public a new addition to what he has before given them; but it does require subsequent inventors and the public to respect his right to the extent to which it is defined in his specification. And what is there in reason or justice to require the interpretation of such definition of legal right to be determined otherwise than according to the express terms of the document, supposing them to be unexceptionable? The judge admits that, in point of language, the component parts may be included in a claim of the composite substance. "The new conclusion (he says) may be deducible from the known and specified premises, and, in strict reasoning, therefore *involved* in them." But he adds:—"Still, he *held* the first party the premises side by side, and deduces the conclusion, is the inventor." True; but why should the inventor of the conclusion be allowed to supersede the inventor of the premises?

The other judge, who held practically the same opinion, puts the case thus:—"I apprehend that nothing is an infringement now which would not have been an infringement immediately after this specification was enrolled." Certainly not; because the document then, as well as now, ought to be construed according to the full import of its terms, as they are practically understood at each period. A patentee has to bear the burden of the commercial loss arising from the undue appreciation of his invention by those who are disposed to be conversant with it. We are well acquainted with instances of inventions being "before their time," and for this reason alone being unproductive of benefit to their owners. And surely it will not be said that the fact of an invention being in advance of the knowledge current in its day has any effect in diminishing its intrinsic value otherwise than commercially! The loss occasioned by its natural depreciation in this sense necessarily falls upon the patentee; and is not, then, the advantage of his legal right of license over all improvements, made during the currency of the patent, in his mode of carrying his invention into effect, required to balance a fair account as between him and the public? Is it true, then, that "common sense and common justice" require the limitation of the terms in a specification (otherwise unexceptionable) according to the strict limits of the knowledge of the patentee and other competent persons at the date of the document?

THE PRIVY COUNCIL.—APPEALIFICATION FOR EXTENSION.

There is nothing for me to notice here, as the validity of the patent was not pronounced upon, except the following expression of opinion in the judgment:—"Their

lordships are of opinion that, notwithstanding such an alteration has taken place in the practice, it does not materially detract from the merit of the original invention."

TRIAL AT LIVERPOOL BEFORE JUSTICE SMITH.—HEATH (ADMINISTRATRIX) v. SMITH.

At this trial, the specification was held to include the use of the elements of carburet of manganese, which, according to the evidence, were used by others at the date of the patent. As such use of the elements was not new, the patent was not valid, and there was no legal right infringed. Had such use been new, the patent would have been valid, and there would have been an infringement of it by the use of the said elements.

THE QUEEN'S BENCH.—BEFORE LORD CAMPBELL C.J., WIGHTMAN J., ERLE J.

It will be enough at present to mention that the foregoing judgment was confirmed, and an application for a new trial refused, on the ground of the sufficiency of the evidence to establish the prior use of the invention by others at the date of the patent.

Office for Patents, 50, Chancery-lane, Oct. 14.

WILLIAM SPENCE.

THE SAFETY-LAMP.

SIR.—There appears to be some difference of opinion amongst the Government Inspectors of Coal Mines, as well as with mining engineers, with respect to the use of glass in the construction of safety-lamps. I have not had an opportunity of experimenting largely with these kind of lamps, but from some that I have made, I quite agree with the remarks of Mr. Atkinson, in his last Report on Coal Mines, in which he appears to be very much against the use of safety-lamps consisting of a combination of glass and wire-gauze in fiery coal mines. I have made a few experiments with several patent safety-lamps, but shall at present only give the results of the trials with one of Moxard's patent lamps, a description of which appeared in your Journal a short time ago, and to which your readers must refer who are unacquainted with their construction.

Although this lamp is a very clumsy one, and what miners here term a "lantern," I have found it useful when making observations in a strong current of air, and where a candle would have been blown out—for this lamp certainly gives a very good light. I have not, however, had it in a fiery part of a mine, but tried how it would stand fire as follows—holding the small hole at the bottom of the lamp, through which the air is supplied to the flame, over an ordinary gas-burner, I turned on the gas, which instantly fired in the lamp, and in a few seconds broke the glass. Now, I think if this lamp will not stand this test, it is not fit to be taken into an explosive atmosphere. But the principal part of this lamp consists of a mechanical contrivance to put out the flame if the oilier attempts to remove the top part of the lamp, and which I suppose constitutes the patent. Now, if this were accomplished, as the inventor states, it would doubtless be of great value in a coal mine. I find, however, that it is perfectly useless for this purpose; for I can open the lamp in the most simple manner without putting out the flame, and which I think any oilier would very soon find out. To open the lamp, it simply requires the cotton wick to be put up rather higher than when it is burning, and then to hold the wick fast with the tricker or snuffer, until the thumb screw is put into the proper position for the lamp being opened. There are other simple ways of opening this lamp, which will occur to any one who examines its construction. I will, on some future occasion, send you some remarks and suggestions for improvements in the construction of the safety-lamp.

OCT. 20.

(We give this letter insertion, although we by no means endorse the statements contained; however, the writer being a rival inventor, may account for his rather severe mode of testing the merits of a safety-lamp, and for the opinion he entertains with regard to the invention. We repeat that the lamps of Daburle, Moxard, and Munier, are among the safest extant, and, so far as we have found, they cannot be opened without extinguishing the flame. Moreover, not less than three hands could fulfil the office which he admits are necessary to open the lamp.)

—HAROLD WORTH.

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Meetings of Mining Companies.

GREAT WHEAL ALFRED MINING COMPANY.

The half-yearly meeting of shareholders was held at the office of the company, Crown-court, Threadneedle-street, on Thursday, —Mr. T. FIELD in the chair.

The notice convening the meeting having been read, the accounts to the end of Aug., as follows, were then produced:

Mine cost, from March to Aug., six months.	£4737 16 2
Doctor and club	52 19 5
Merchants' bills	3049 15 8
Sundries	47 0 6 = £7837 11 9
Copper ore sold £4274 5 1	
Tin ores sold... 53 14 3	
Lead ores sold... 22 3 11 = 4350 3 3	
Deduct lord's dues 161 8 11 = £4188 14 4	
Old chain sold, interest from merchants' bills deducted, &c. 25 14 4	
Balance from last account, April 3013 10 11 = 7228 0 2	
Leaving balance against mine... 2659 11 9	

The following report was then read:

Oct. 20.—Since the last general meeting, the 180 has been driven west 10 fathoms, through a large and promising lode; the last 3 fms. have greatly improved, and it is now worth 14/- per fm. The bottom of the 170, immediately over, is working on tribute at 4s. 6d. in 11 ft., and, looking at the dip of the ore, a further improvement is daily expected. The 170 has been driven west 10% fms., 6 fms. of which opened a piece of good tribute ground, but the lode latterly has been much disordered by the Hookan, and is now only producing occasional stones of copper ore. A cross-cut has been driven in this level, and intersected the south part of the lode, which has opened some moderate tribute ground, and will be set on tribute as soon as we have communicated a winze with this level, which we are sinking below the 160. The 180 has been driven west, on the north part of the lode 12½ fathoms, in which some small bunches of rich ore have been met with; we are now crossing-out at the extreme end, to see the south part of the lode: we have driven 3½ fms., and expect to have about the same distance more to intersect it; this level (160) has been driven east from the western cross-cut, on the south part, 3 fms.; worth on an average 30/- per fm., and the present end equal value in value; this level has also been driven east of the eastern cross-cut 6 fms., 4 fms. of the former were worth full 30/- per fm., the present end is poor, and suspended, to sink a winze, as stated above, to the 170, which is down 5 fms., and worth 10/- per fm. The 148 has been driven west 11 fms., through a lode worth on an average 8/- per fm.; the present end is worth 12/- per fm., with every prospect of further improvement. A cross-cut has been driven between the 148 and 160, and intersected the south part of the lode, and opened east on 2 ft 2 fms., the present end is worth 12/- per fm. The 130 west, on Alfred Consols lode, has been driven 5½ fms.—lode small, and producing little ore. We would add, in conclusion, that although our 160 and 170 are not looking so promising as a few months since, our opinions will yet prove productive. Our immediate ground—that is, between the various levels—is producing large quantities of ore. We calculate our next sampling will be fully 250 tons of copper ore, which we estimate at from 1400/- to 1500/- M. W. MICHELL; WM. BUGLEHOLE; WM. ANTHONY.

The CHAIRMAN observed, that the accounts as shown must be satisfactory; as but for the delays which had been caused by the breakage of their machinery the balance would, no doubt, have been on the other side. There was one matter which they would now have to determine on—the period at which the meetings should take place, it having been the opinion of many persons that they should be often. The committee had had that under consideration, as well as the call which would be necessary. They thought 5s. would be all that would be required, but which they also left to the meeting.

Mr. POWELL proposed that the accounts be received and adopted, which, being seconded, was carried unanimously.

The CHAIRMAN said that, from the foregoing accounts, a call must be made; but one thing should be observed—they had been to a very great expense, which would not occur again, and which had arisen from the breakages. The alterations that had been made in the machinery were most efficient and substantial. The merchants' bills were large, certainly, but the materials were absolutely necessary, and in the future there would be a large reduction under this head. The returns were likely to increase one-half.

Mr. POWELL proposed that a call of 5s. per share be made, which was seconded by Mr. NEAT, and carried unanimously.

A SHAREHOLDER having asked the amount of arrears of the last call,

The CHAIRMAN said they could not really be called arrears, some having been received since the accounts were made up, and the others were sure to be paid. In connection with this subject, he could say this much, that from the commencement of the mine no merchant had ever had to sue a shareholder.

After a discussion on the period for holding future meetings, it was resolved that they be held quarterly.

The CHAIRMAN, in reply to a shareholder, informed the meeting that, owing to the breakages, the returns had not been so large as they would otherwise have been. He should have attended their last meeting, being on his journey up, but hearing of the accident he returned, thinking that he might be more useful on the mine.

A SHAREHOLDER, on the part of Mr. Nichols, one of the lords, asked what they intended doing on his part of the seat?

The CHAIRMAN said he could not say; the way in which the mine was worked he could assure them was considered by their agents, and highly practical men, to be best.

Mr. Orr was elected to be on the committee, in the room of one who had retired. The remaining gentlemen were re-elected, and a vote of thanks to the Chairman terminated the proceedings.

EAST PROVIDENCE MINING COMPANY.

The general meeting of adventurers was held at the offices, Coshall-court, Old Broad-street, on Monday, —Mr. NICHOLAS HARVEY in the chair.

Mr. ROSCOKLA read the notice convening the meeting, and a statement of accounts, from which the subjoined is condensed:—

Calls received	£512 0 0
Balance last audit	£165 18 8
Mine cost, June, July, August	245 18 2
Merchants' bills, &c.	82 5 4 = 494 2 2

Balance in favour of adventurers..... £17 17 10

Mr. ROSCOKLA then read the following report:

Oct. 17.—Since the last meeting of the adventurers, held on June 18 last, we have driven the eastern adit on Providence north lode about 20 fms.; driven Wheal Smith adit south 7 fms., 4 ft., and north 3 fms., and Wheal Mount adit 9 fms. 2 ft. south, on the Providence cross-lode. We also, after a very great deal of trouble, occasioned by the great quantity of water, cleared up an old shaft on the Providence south lode, and also cleared and secured Chapple shaft in Wheal Mount adit, which is 17 fathoms, and erected a whim thereon. The lode in the eastern adit ends at about 2 feet wide, composed of pyrite, capel, and spar, with tin of low quality, but not good enough to save; this is Providence north lode, it has been very productive in that mine, and from its appearance here, all doubts prove equally productive at a deeper level, and very probably we shall have it productive in the adit in coming into more settled ground; at present we have only two men here, at 40s. per fm. The men have been about Chapple shaft, the next week we shall have four men in it. After driving Wheal Smith adit about 10 fms., to cut the lode in the cozen pit, referred to in my last report, and not having cut it, we commenced sinking on it, and in sinking the pit about 7 ft. deeper it divided away in a very singular and unexpected manner. We have now stopped the adit end, and put the men from it to secure Chapple shaft. The Providence cross-lode, in Wheal Mount adit, has varied in size and productiveness; after driving on it about 3 fms. we came into a very good lode, worth for a few feet at the rate of 40/- per fm., but on coming into a bar of hard and unconsolidated ground it has become less productive. It is now about 6 in. wide, producing rich stones of tin, but on the whole not enough to pay for driving; we have gone through 3 fms. of good tin ground here; driving at present by six men and one boy, at 50/- per fm. We are also driving west from Wheal Mount adit, on the Standard lode, by two men, at 40s. per fm.; we can trace ancient workings in this lode for 70 fathoms in length; it is now in the end about 1 foot wide, containing tin, and is of a most promising appearance. We think in driving this end a short distance further we shall cut another part of the cross-lode, which we think will be the main part. We have also cleared up a shaft, opened by former workings, on the caunter, about 8 fms. deep; we had a great deal of water here, so much so that we could scarcely see the bottom, and had only time to see the lode and break a sample of it; the lode is about 1 foot wide, containing tin, but not rich. There is a deposit, or carbona, standing to the north of the lode; it is about 2 feet wide and 4 feet high, worth 10/- per barrow. This is a very important point, taking into account the great productiveness of similar carbonas in the Providence Mines. The shaft referred to, which we closed on the Providence south lodes, now their main lode, is a perpendicular one, and took the lode at a depth of 12 fms. The lode had been cut at 6 fathoms from surface, and all worked away from that place to surface and to bottom; the surface workings are very extensive, and must have been very productive to the ancient workers. This lode is the principal feature in this sett, it is now very productive in the Providence Mines, and one of their levels in it (the 12) is now very near our sett; the lode in it is very productive, and ground easy for driving. This lode in that mine is nearly all worked from the 50 fm. level to surface, and as it is all worked shallower in our sett, and rich in that mine close up to the boundary, we may expect equally good results here, and we strongly recommend the immediate erection of an engine on the above shaft. The lode in the bottom of the shaft is now about 18 in. wide; here also we could only break a little of it, which we found good, the water being very quick. Another very important feature here is that in sinking this shaft about 15 to 20 fms. it will intersect the granite, which underlies the Kilkis; at and below this junction we may expect rich deposits of tin, such as being the case in Providence. By putting an engine on this shaft we can command all the sett by means of horizontal rods, and can at once commence working in the caunter and carbona, sink a shaft on the eastern adit lode, and also work Wheal Mount lodes and the tin ground opened in the adit. On the whole, we consider we have here a very valuable property, and advise the immediate erection of an engine and energetic working of it, when we cannot fail of great success.—W. HOLLOW, T. UREN.

A SHAREHOLDER enquired whether the mine was sufficiently developed to determine as to the best spot to erect the engine?

Mr. HOLLOW was of opinion they had cleared up quite sufficient to prove the most eligible place for the engine. They would only require a 30-in. pumping-engine, and which could be also used for stamping. At Wheal Evelyn, he believed, they had an excellent engine for sale, but he considered it would be better to instruct the committee to purchase one, which would be an authority for them to attend mining auctions.

The CHAIRMAN considered it would be cheaper to put up a separate cylinder for the stamps.

Mr. RICHARDS remarked, that Mr. Hollow's object appeared to be to economise the cost until the mine was more fully proved.

The report and accounts were then unanimously adopted.

The CHAIRMAN said, as it appeared to be the unanimous wish to erect an engine, the best course would be to authorise the committee to do so.

A resolution was then passed, that the Chairman, Mr. Roscokla, and Mr. Hollow (the purser) be a committee to purchase and cause to be erected a suitable engine.

A SHAREHOLDER proposed that a call of 2s. per share be made for working the mine, as provision could be made for the payment of the engine at the next meeting.

Mr. RICHARDS seconded the resolution.

The CHAIRMAN said, if they found it more advantageous to pay ready money for the engine they could call a special general meeting upon the subject.

The resolution, making the call payable on or before November 3 was then unanimously carried.

Mr. HOLLOW proposed that an alteration should be made in the place of meeting, and that they should be held alternately in Plymouth.

A SHAREHOLDER said, that three-fourths of the mine was held in London, but it was quite immaterial to him, as he received no pecuniary benefit, merely lending his office gratuitously for the convenience of the shareholders.

Sir THOS. TANCHER, after a very lengthened discussion, proposed that the meetings should be held on the mine, and afterwards adjourned to London for the confirmation of the proceedings; this course was unanimously agreed to.

Mr. HOLLOW having duly explained by sections the present state of the workings, as also the proposed site for the engine, a vote of thanks to the Chairman terminated the proceedings.

SOUTH CUDDRA MINING COMPANY.

A general meeting of adventurers was held at the office of the company, Austin-friars, on Thursday, Mr. W. A. COOMBE in the chair.

Mr. CHARLES (the secretary) read the notice convening the meeting, and the minutes of the last, which were confirmed.

The reports of the committee of management and Capt. TRUMAN were then read.

During the interval which has elapsed since the last meeting, the new works have been prosecuted with vigour. The engine has been erected and set to work, and is found to be an admirable machine, and fully equal to the requirements of the mine. Mr. West, the engineer, has, with his usual ability and promptitude, done his work quite to the satisfaction of your agents. The engine-shaft has been completed to the 40, and the pumps have been permanently fixed in the shaft to that level. A cross-cut has been driven north 13 fathoms, and has passed a lode on which a level is being driven east, under where such fine stones of copper ore were raised in the 20; it is expected that good results will be obtained when that point is reached. A branch has been passed further north, containing some rich copper ore, thereby showing that the ground is congenial for copper, and also indicates what may be expected when the Little Crinnis lode is reached. The cross-cut south has been driven 6 fathoms, though the lode is not yet reached, but we are expecting to intersect it daily; it was hoped that it would have been done before this meeting, but your committee will see that you are all furnished with the particulars as soon as the result is obtained. It is intended to drive this cross-cut to the south boundary, which will be the north boundary of the South Crinnis Mines, as there are several known lodes traversing the ground between the end of this cross-cut and that point. The works at the mine have reached that point when good results may be expected in a short time, as the lodes are numerous, the ground is highly mineralised, and the productive character of the district proved by the rich mines by which we are surrounded. Mr. Charles has just returned from the mine, and will answer any question which any shareholder may wish to put to him.

Oct. 31.—The 40 cross-cut north is being driven by six men, and is now in 13 fathoms from the shaft; I calculate we have 3 fms. further to drive to cut the Little Crinnis lode. The 40 cross-cut south is in 6 fms. from the shaft, with beautiful ground, but no lode as yet.

We have part of men driving east on the lode passed through in the 40 cross-cut north, 4 fathoms from the shaft, to the intersection of the gossan with the caunter lode, about 15 fms. further east, when I believe we shall get a good lode, from the indications above, where it looked very promising. We have put in a new water-pump for throwing down air and blowing off smoke, which quite answers our purpose for the time until the water increases from the lodes. We have just passed through a branch of copper in the 40 cross-cut north of a promising character; although we have not intersected anything very good as yet, there is nothing discouraging, as the ground is quite congenial for copper, and by opening out on the several lodes I believe we shall raise much copper therefrom. Everything is going on satisfactorily: the engine consumes about 8 tons of coal per month.—S. TRUMAN.

A statement of accounts was presented, from which the subjoined is condensed:—

Balance last audit	£ 96 16 10
Calls received	1066 19 0
Copper ores sold	266 19 3 = £1430 15 1
Mine cost, April to Sept.	£ 874 6 1
Steam-engine	400 0 0
Merchants' bills	97 1 6
Charges	45 0 0
Discount	0 14 5 = 1417 2 0
Balance in favour of adventurers	£15 13 1
In the estimated amounts of assets and liabilities, the balance against the mine was 6051 17s. 1d.	

Mr. CHARLES said the auditor had gone through the accounts, and, being present, would no doubt give his report.

Mr. NICHOLAS said he had been through the accounts, and examined them very carefully; but a child might audit them, as the books were kept in the most able manner, and their affairs laid in a nutshell. The accounts were open to any shareholder, and he would conclude by moving that the report and accounts be received and adopted.

Mr. EATON seconded the resolution, which was carried unanimously.

Mr. TREMENHURST observed that, as Mr. Charles had just come from the mines, it might be interesting to the meeting to hear any observations from him as to the present position and future prospects.

Mr. CHARLES said the object at the last meeting was to purchase a steam-engine, get it erected, and sink the shaft to the 40 fm. level, both of which had been done, and they expected, from indications at the shaft, to have had a large lode in the cross-cut; but lodes sometimes varied, and he considered that generally favourable for good results in depth. In a cross-cut in the 40 fm. level, they had to drive east from 10 to 14 fathoms to come to the junction met in the 20 fm. level with the gossan and South Crinnis caunter lode, and when they came to the 40 they fully expected good results: the driving would cost from 21 to 21½ per fm. They had men at work night and day, and they hoped the point would soon be reached. They had 2 or 3 fms. to reach the Little Crinnis lode, and they met with a branch yielding the stones of copper produced, and which suggested well that when they reached the lode it would be productive. They intended to drive the cross-cut to the south boundary, and had hoped to intersect the lodes by the present meeting. The mine was very highly spoken of in the locality, and several gentlemen were anxious to join the company. He (Mr. Charles) fully expected that in two or three months they would intersect the lode in the north and south cross-cut, and he firmly believed that they had a mine which would pay well for the outlay. The works were all carried out most satisfactorily, and the engine was a most splendid one, the adventurers being indebted to Mr. Michell for the bargain, as no party could tell it had been used, and he would not take less than 50 per cent. more than he gave for it. Mr. Charles concluded by explaining a plan the present state of the working, and exhibiting the specimens from the branch alluded to.

Mr. MICHELL considered it was a matter of certainty, that if they got these branches they had a good copper lode when reached.

The CHAIRMAN said the last call was made for the purpose of erecting the engine and other necessary work; but it was a young mine, and required money; they had got the engine, and therefore, were not going back, but forward, and the question was, whether they had not better make a small call to put them in a proper position. He must remind them that at the last meeting they had only calculated upon three months' work, but had done six months.

Mr. CHARLES, in answer to a question, said the present outgoing, including merchants' bills, was 130/- per month.

Mr. MICHELL, after some discussion, proposed that a call of 2s. 6d. be made, which was seconded by Mr. Crisp, and carried unanimously.

A vote of thanks to the Chairman, committee,

about 10 tons of ore and 5 tons of blende, which are in course of dressing; he hopes this quantity will soon be increased to 20 tons, when he will give directions for its sampling. A periodical report will in future appear in the Mining Correspondence.

EAST HENDER.—The mine is progressing satisfactorily; the lode in the shaft is producing some fine stones of ore.

AT NORTHE WHEAL WREY CONSOLS., the lode still continues to improve, both at the shaft and bottom of the 10, and a good lode is looked forward to in driving the 20, in getting under this ore ground. This mine has been inspected by an agent of the adjoining mines, whose report will be found in our usual columns.

AT SORTRIDGE CONSOLS., there is a splendid lode in the 62, east and west of Hitchins's engine-shaft; and from all appearances this mine is likely to attain its former position in the Dividend List.

MARY ANN, in addition to its usual dividend of 45s., at the next meeting will give a bonus of 5s. or 10s. per share.

SOUTH CARGOLL.—This mine bids fair to repay the outlay and perseverance so fairly expended. The appearances of the mine are such as to warrant the most sanguine hopes of success. Stimulated by these prospects, the Constance adventure is making preparations for the active prosecution of their mine. These mines, fortunately, have improved just in time to employ many who have left the East Wheal Rose. It was feared, when this event took place, that numbers would have been thrown out of employment and the parish burdened. Such, however, is not the case: the redundancy of labour so confidently predicted is not to be found—the men who could not procure labour in the adjoining mines have gone west, where they were gladly taken up at once, thus giving practical illustration of the needless alarm entertained and descended on so largely in the recent Mines Rating Bill.

PENCOEDE MINES.—Capt. Gross has been appointed to these mines, *vice* Capt. Champion and Tippett, whose advice the company have not followed. It is to be hoped that a change in the management will put the mine into better trim. Capt. Gross, having now full power, will do well to exercise it, and not be dictated to by persons who do not understand the profession.

AT HALLOON, near the Indian Queens, a process novel for Cornwall is being carried on—washing under. Yellow ochre has been procured here many years since, but the existence ofumber was unknown until latterly. It is procured at Newquay, and carried four miles to the washing place, the tail of an adit of an old mine, where the water is very pure—an essential in this preparation. The colour is peculiar, being a bister brown, very light, and admirably adapted to paperstainer's purposes, and not as an oil pigment, scarcely having body enough. It is found in a white kind of kilas, near the surface, and only requires washing to be marketable. All the mines in this locality are using their utmost endeavours to bring their produce to market. The Newquay Railway Company, from which so much was expected, have adopted the suicidal principle of high prices, and prevented these mines availing themselves of its services. The St. Austell and St. Denis Clay-Works are also much busier than usual, considerable shipments being made, and a better demand existing than for some time past. They who purchase at present rates will do well, as the mine is now over, and it is pretty certain that prices will advance.

WHEAL MARGARET.—An improvement has taken place in the 60 east, the lode being worth 1 ton of tin per fm. In the 30 east, Carn Moor lode is worth 25s. per fm. Each of these are new discoveries. The other parts of the mine are looking as well as last reported.

CLARENDRON ON JAMAICA.—The last reports are favourable, and it is determined to carry out the suggestions of Mr. A. Tregoning, under the advice of Messrs. John Taylor and Sons, to confine the operations principally to sinking the shaft, to prove the mine in depth.

LACKAMORE NEW MINING COMPANY.—We are informed that the whole of the shares in this company have been taken up.

CHOLLACOTT CONSOLS.—The railway cutting through this sett is now about completed, at an average depth of 16 ft., and in which ten lodes have been discovered, six within 80 fms. of each other. An engine-shaft will now forthwith be sunk, engine erected, and the mine be prosecuted with the vigour it deserves.

KELLY BRAY.—The 35 end continues remarkably good. The agents state the 45 is now producing rich stones of ore, and they expect in 1 fm. driving to meet with the bunch driven through in the 35; should this end come into the course of ore it will double the value of the property, as the bunch of ore in the 80 west continues to hold good.

NORTH WREY.—We hear that the lode still holds good in the winze; the shaftmen have commenced to drive the 20 fm. level, and are breaking good stones of ore; a fine lode is expected when they get under the winze. The 10 fathom level is also improved, producing good saving work, and the ground much easier. We have commenced dressing, and hope soon to have 10 tons for sale.

DEVON GREAT CONSOLS.—At Wheal Emma, in the 74, going east, the lode is still worth 25 tons per fm.

GREAT WHEAL BUSY.—The 30 is now in sight, and they hope to see the bottom of the mine, which is the 100, in about six weeks. They have drained the last 12 fms. of water in 10 days. After fixing the necessary pitwork they expect no further drawback, and the courses of ore in the bottom of the 30 and the 50 will be available, when twelve men will be at once put to sink the sump below the 30, where, from good authority, they will sink upon a fine course of ore. The first 6 ft. of tin will take place next week, after which the sales will be monthly, and the monthly sales of copper ore are expected to be not less than 400 tons. This is considered unprecedented in an old mine, without new ground being opened.

CARMBOROUGH VEN.—The prospects of the mine are now encouraging.

HUCKWORTH BRIDGE.—I was at this mine a few days since, and saw the most promising end I have seen for many years—a lode from 4 to 5 ft. wide, with very thick veins of copper, together with large stones of good siliceous ore. The working stratum is unexceptionable, the granite within a short distance, and the Welsh Friendship cross-course not far ahead. I inspected this mine for a friend, and I should like to know why so promising a lode is not worked with more vigour? It really deserves it. I think an engine-shaft would rather surprise the present shareholders by its results, at a few fathoms below adit.—G.

WHEAL EDWARD.—The leading points are being pushed on with vigour, and the next sampling will be one of the best made from this mine. They have opened, on the south lode, the west end is producing from 8 to 9 tons of ore per fm., and the east end 5 to 6 tons per fm. The samples of ore sent to the London office from the lode have given a produce of 29%, and is considered the richest yellow copper in the country.

A SINGULARLY PRODUCTIVE MINE.—Wheal Margaret, in the Lelant district, under the very efficient management of Capt. Treweeke, has been long known a productive mine, and is likely to continue so for a long period. But in one respect its productiveness is not generally known—that in one year it produced *thirty* tons! The adventurers, instead of declaring a dividend on this production, liberally gave the men all the benefit, equitably deciding that "the labourer is worthy of his hire."

EAST BASSET continues to look very well; the great discovery in the 60 on the south lode, being still worth 100f. per fm.; whilst the same level west, back of the horse, is of nearly the same value. In the 50 cross-cut the ground has much improved, and the tin lode, which in the 60 east is now near 5 ft. wide, will be probably about Christmas. [In another column will be found a communication to the manager, Capt. William Richards.]

Mr. R. Tredinnick, of Gresham House, furnishes us with the following information as to the close of the markets late last night (Friday):—

The market for shares in Cornish and Devon is slightly inactive to-day: the public, so previously to yesterday had largely invested, appear to pause, and watch the events of events as they embark further. The pressure for money, and the all but universal stagnation in commercial pursuits, also tend to retard operations; yet a strong desire is evidently evinced to give mining investments the preference over all other speculative securities of the day. The large profits paid in dividends upon the price of shares, naturally attract attention, and it is with satisfaction we mark that dealings generally are restricted to sound and legitimate undertakings.

Our enterprise, as at present conducted, is free from feverish excitement; the general schemes that inundated the market some few years ago no longer rear their heads; the public are protected from many losses which arose formerly from recklessness in abortive and defunct projects. Mining investments, undoubtedly, to sustain risks, for without hazard they would not afford so many brilliant instances of large and rapid fortunes upon comparatively small outlays, as arose in Trelawny, Buller, East Rose, Lelant, South Cadron, Devon Great Consols, Dolcoath, Trelawny, Kithen, Carn Brea, North Bassett, West Bassett, South France, and many others. Still, with the aid of science, improved machinery, advanced education, and enlarged knowledge of lodes and stains, the chances of success (with practical management and analogous profitable surrounding mines) are much enhanced, even in comparison with what existed only a few years back, when speculation was rife, and men commanded higher premiums even than many of our best mines now currently sell at. Railways pay from 2 to 5 and 6 per cent. interest; banks, 4 to 6 per cent. upon current value; Consols is subject to large and frequent fluctuations, therefore we must be prepared at mines, which yield in two-monthly and quarterly dividends from 15 to 20 per cent. per annum, fluctuating as well. On the whole, we much doubt whether the losses arising from Cornish and Devon mining ventures are not, both in number and amount, less serious than in the securities mentioned. Devon Great Consols, Bassett, Bodmin, Carn Brea, Dolcoath, Parc, Alfred Consols, South Cadron, and many another mine have continued to pay regular dividends over a long series of years; and we are much mislead if our prospects at present do not justify increased rather than diminished remuneration.

On the Mining Exchange, little business has been transacted to-day; in fact, the members have seceded from that institution, and, without fresh spirit and energy, the Exchange must be regarded as defunct. Not a single mine has been dealt in, nor any others, excepting the three following:—East Hill, 25s. to 35s.; Gwastow United, 25s., 26s., 26s.; Sortridge Consols, 24s., 25s., 26s. On the Stock Exchange, the only transactions recorded in British and foreign assembly rooms business has been effected in Great South Wales, 16 to 15%; North France, 13% to 14%; North Bassett, 15% to 15%; Buller, and 4½%; Kelly Bray, 2½ to 2½%; Lady Bertha, 25s. to 26s.; Old Folgers United, 5s., 5½, 6%; Tredegar, 25s. to 26s.; Mary Ann, 4s., 4½%; Trelawny, 25s., 26s.; South Gorland, 5; Edward, 9½%; Par Consols, 19½%; South Buller and West Penstruthal, 2½%; Bassett, 18s.; Copper Hill, 19½%; whilst enquiries have existed for Buller, East Bassett, Cupid, Carnforth, East Bodmin, Bodmin, Condurrow, St. Ives Consols, and Wheal Kitty (Lelant).

BURTON.—At Wheal Emma, the lode continues good, and a large number of men, boys, and girls, are employed. A short distance from this mine, an adit has been sunk, and fine stones of copper ore taken up.—At Wheal Elizabeth, Widdicombe, the lode continues very favourable.—At the King, Queen, and Dart, progress is being made, but not so brisk as of late.—Silver Brook and Bell are stopped for the present.—Owlcombe will soon be put to work, it is reported.

STILLING SPIRIT FROM BEETROOT.—A company is at present in the formation for carrying on operations upon a very large scale in France. In London who have taken the matter in hand is a guarantee that ample will be provided.

GOVERNMENT SCHOOL OF MINES.

On Friday, Dr. Percy continued the subject of the "Chemical Combination of the Metals."—Action of Sulphur: The combinations of the metals with sulphur are of the highest importance, and should, therefore, be carefully studied.

The metallic sulphides are all solid at the ordinary temperature, and generally brittle; their specific gravity is generally less than that of the metals they contain. They have generally a brilliant metallic lustre; many occur finely crystallised. They are inodorous, when struck or heated evolve the characteristic odour of sulphur; they possess a great variety of colour. In atomic constitution they generally correspond to the oxides, but not always.—Action of Heat: Some are fusible, others infusible. Those sulphides which fuse at about a red heat are more fusible than their respective metals, as sulphide of iron; whilst sulphides of easily fusible metals are less fusible than their respective metals, as sulphide of lead. When heated in a close vessel, some undergo no change whatever, as disulphide of copper; others are partially reduced, as iron pyrites; others are completely reduced, as sulphide of gold. Some are fixed, as disulphide of copper; others are volatile, as sulphide of mercury.—By heating with excess of Air: Such as are not reduced by heat alone are converted into products, which vary with the degree of heat, and the nature of the sulphide. Thus, if common dioxide of copper be heated with excess of air at a certain temperature it can be converted wholly into oxide; at another temperature into a mixture of oxide and sulphate; or, by heating in a particular way, by varying the degree of temperature at different stages, the whole of the sulphur can be eliminated as sulphurous acid, and the copper obtained in the metallic state. Sulphides may be produced by heating the metals with sulphur, or in the vapour of sulphur; by heating in sulphuretted hydrogen; by heating with a metal containing excess of sulphur, as iron pyrites; by heating with metals which do not contain excess of sulphur; by heating metallic oxides with sulphur; by heating certain sulphates with carbon. A patent has been taken out to manufacture carbonic acid; by heating a mixture of sulphate of baryta with carbon, in close vessels, volumes of carbonic acid were then evolved, at a comparatively low temperature. By heating the oxide in sulphuretted hydrogen: this method has been used on a large scale for the separation of nickel and cobalt from manganese. By precipitation from a solution of the metal; by sulphuretted hydrogen, &c. In Platner's process for the separation of gold from certain poor ores (arsenical pyrites), the gold is precipitated from the solution from the roasted ore in chlorine water by sulphuretted hydrogen, &c. A very wide physical difference exists in certain sulphides identical in composition, when prepared by the dry and wet ways respectively; thus sulphide of antimony, prepared by precipitation, is red, by fusion is grey, &c.—Reduction of sulphides by heat alone, as sulphide of gold; by heating in hydrogen; by heating with another metal—in certain cases by heating with carbon alone; by heating with access of air. This, perhaps, is one of the most important methods of reduction; it plays a most important part in the smelting of copper and lead, &c. When sulphides are heated with access of air to dissipate sulphur, the process is termed roasting; but this term is also applied to heating with other intents, as we shall see further on. Difference of temperature plays a most important part in roasting, as in the roasting of disulphide of copper, above noticed,—the reactions which then take place were fully explained. By heating certain sulphides with alkalies, alkaline carbonates, or alkaline earths, as in reducing galena with carbonate of soda.—Action of Phosphorus on Metals: There are some facts relating to the combination of the metals with phosphorus which have a great practical interest, as the action of phosphorus on iron. Phosphorus is almost always a constituent of iron ores—in all the coal measure ores undoubtedly; and, consequently, we always find it in pig-iron: The influence of phosphorus, even in minute proportions, exerts a most remarkable influence on the working qualities of iron. The so called "cold short" is produced by phosphorus: phosphorus is not the only cause, but it is one of the principal causes of cold short: its presence in copper exerts a contrary influence, making it "hot short." Copper containing up to 2 per cent. of phosphorus can be rolled cold, but is very brittle when hot, &c. Phosphides may be produced by heating the metal in a finely divided state with glacial phosphoric acid, or acid phosphate, with carbon; by reducing the phosphate with carbon, &c., by heating the metal with common bone earth and carbon. Action of Arsenic on Metals: The hardness with which arsenic communicates to some metals is very remarkable. In Sweden it is employed to harden files; the surface of iron may be greatly hardened by heating it with a mixture of arsenious acid and carbon. Arsenides may be formed by heating the metal in the vapour of arsenic; by reducing arsenites, or arseniates, &c.—Separation of Arsenic and Phosphorus from Metals: By heating with an oxydising agent, as nitre, or nitrate of soda; by heating with access of air; by heating with alkaline poly-sulphides, or sulphides with carbon, or alkaline carbonated with sulphur, &c. In Napier's patent copper smelting process, this method was applied to free the ore of arsenic, &c., and antimony. By long-continued boiling with an alkaline poly-sulphide; this method has been employed to free nickel species of arsenic.—Action of Carbon: The most remarkable of the combinations of metals with carbon are those of iron, as cast-iron and steel. These combinations are produced when the oxide is reduced with carbon at a high temperature, as in iron smelting, reduction of manganese, nickel, &c.; by cementation, as in the manufacture of steel; by heating in gaseous carbio-hydrous, &c.—Separation of Carbon from Metals: By heating at a high temperature with free access of air, as in refining and puddling iron; by fusing the metal with a small proportion of its own oxide.—Action of Silicon on Metals: We have abundant reason for believing that silicon in various cases exerts a most powerful influence on the working qualities of some metals, and on none more so than on iron—it is generally present in pig-iron. Silicon is easily reduced by heating it in contact with a metal with carbon at a high temperature. Copper, with up to 2 per cent. of silicon, is very tough, and possesses many of the properties of bronze; it can be rolled into very thin leaf. These combinations can be produced by reducing the oxides with carbon at a high temperature in the presence of silicon, as in iron smelting, &c.; or by heating the metal with silica and carbon. Metals may be freed of silicon by heating with potassium or soda, without the aid of carbon.

The lecture by Dr. Percy, on Monday, treated of the "Action of Chlorine on Metals." This was divided under several heads, as the action of hydrochloric acid on metals; the heating with chlorides which yield up their chlorines; dissolving in acid, such as nitric or sulphuric, and precipitating the metal as a chloride; the calcination of sulphides with access of air. The amalgamation process in the silver works at Freiberg, Saxony, was then alluded to, where a sulphide is changed to chlorine by the addition of common salt. The same treatment had likewise been applied to galena. There was a mode of reducing by heat alone, as well as with another metal. Chloride of silver was reduced by zinc; and in the Mexican process quicksilver was used. Heating in hydrogen: chlorides of nickel and cobalt can be reduced; this, however, is not the case with manganese. Heating with organic matters: the chloride of silver will then be reduced to a resinous substance. Precipitation from solution as oxides, and subsequent reduction of the oxides by complex and indirect methods. Chloride of silver can be reduced by potassium or soda, without the aid of carbon.

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He would now say a few words about cyanogen. Although a compound, yet it acted as part of an element, for instance, in bromine and iodine. Cyanide of potassium is extensively used in electro-plating, and its discovery and application to this purpose is due to Mr. Wright, a surgeon, who formerly practised in Birmingham, and whose attention was drawn to its use by perusal of one of the last of School's Essays. An arrangement was then entered into with the well-known firm of Messrs. Elkington and Mason, and it was employed at the present time, not only as a solvent for gold and silver, but likewise brass. The action of this was now well known. At the time this discovery was made there were some persons who took out a patent for it, and in this no less than 400 saline bodies were enumerated. A Mr. Woolbridge observed that one sulphide of salt was omitted—the alkaline sulphide of soda. He took out a patent for this, which the opposite party stated had inadvertently omitted, and it came into extensive use.

He would next allude to silica. This plays an important part in metallurgical operations. Silicates were divided into two classes—those in combination with water, and others which were not: to use another term, the hydrates and anhydrides. Of this last class, he would mention augite and felspar. In general, although this is not always the case, silica are silicates. In metallurgical operations the silicates were found very definite, and sometimes beautifully crystallised. Silica, at the ordinary temperature of the air is inert, but at a high temperature it becomes energetic, and can displace the strongest acids. At the ordinary temperature it is solid, or either crystallised or amorphous. Its hue varies according to the colour of the oxide. Several specimens were then shown of silicate of cobalt, manganese, copper, and of various tints.

He would now refer to the action of heat upon silicates. Some were fusible, others were imperfectly fusible, and some practically infusible. Their fusibility depended on the base. Lead is easily reduced, whilst zinc is most difficult. The fusibility of a mixture of silicates is greater than that of any silicate it contains. Silicate of zinc may be fused with silicate of potash. Certain silicates of lime and aluminum were alone very obstinate, but when in combination their reduction was easy. The silicates can be entirely decomposed, or only partially. They are generally acted upon by hydrochloric acid. Silica may be prepared by heating silicates with metallic oxides. Silica may be made to combine with an oxide at a temperature lower than that of the silicate. The silicates could be divided into four classes, as the oxygen of the base was then to the acid thus—first base, 1 and 2; second, 1 and 3; third, 2 and 3; and fourth, 3 and 3.

He would next allude to slags. These were called in French *latier*, in German *schlacke*. Sometimes the term "acoria" or "acoriae" was applied to them. It was not necessary, although generally the case, that all slags should be silicates. There was one which came from lead ore, which was composed of sulphate of baryta and fluoride of calcium. Slags may either be a simple mixture of two or more bodies, or an admixture of different substances; perhaps a solution of one silica or another. Slags may be either crystallised or amorphous; although crystallised, they may not have an atomic constitution. From the blast furnace slag had been obtained which were beautifully crystallised. Specimens of these were exhibited. Some of the slags contained much foreign matter. In certain cases the composition of the slag differ, and in some instances they undergo a pseudo-morphic action. This was particularly the case with a slag from the blast-furnace, called "olivine," which was cast in kilns and heated with access of air. When this had been applied for a considerable period the protoxide of iron was changed to a peroxide. Slags were of various descriptions; there was the vitreous, like glass, either opaque or translucent; secondly, compact and not vitreous, having somewhat the appearance of stone; and, thirdly, scicular. A single specimen may produce all these. Their different varieties much depended upon the cooling of the slags: the more rapid the cooling, so had they a greater tendency to be vitreous. In the specimens before them they could see that the external portion retained its glass-like appearance, while the centre was quite compact.

The process of making crown glass was then described, and several specimens shown, and the operation of devitrification explained. The specific gravity of slags varies according to the proportion of metallic oxides they contain. Hardness and toughness are likewise variable: they are tough in proportion to the slowness of cooling. Devitrified glass is tougher than glass itself, previous to being so manipulated. Common slags from the iron furnaces of Staffordshire, are extremely brittle, whilst others are equally as tough. If they are required to be reduced to powder, if heated to redness, and then put in water, it will greatly facilitate the subsequent operation of crushing, stamping, or grinding. Slags possess a great diversity of colour, such as reddish, green, and some very iridescent, and would be of some value if their iridescence were uniform. The fusibility of the slags was of great importance to the metallurgist. Some were fusible, and others difficult. The composition of slags in general was silica, lime, magnesia, protoxide of iron, protoxide of manganese, and alumina. He had previously alluded to lead slag, which was composed of sulphate of baryta and fluoride of calcium. Slags were of a definite atomic composition, with no base, or a series of bases. In the specimen of olivine the iron was replaced by manganese, and there was a small quantity of lime and magnesia. Several of the slags have a very definite form, but contain foreign substances. In the specimen before them there was about 8 per cent. of phosphoric acid. When a charge was imperfectly melted, there would often appear in the slags spots or globules of metal: in general, these were heavier than the bottom, and

was there that the workmen generally looked for them. The slags which were thus examined, when found to contain no metal, were technically called clean; while those which had any metal were termed foul, and had to be again operated upon. A careful supervision of the slags was of great importance.

On Wednesday, the lecture treated of the "Combination of Metals." Gold was never found pure in the native state, it always being alloyed with silver

Mining Correspondent.

BRITISH MINES.

ABBEY CONSOLS.—J. Trevin, Oct. 19: The engine-shaft is down for a 10 fm. level, and as soon as the men have squared the shafts, and put in solar, we shall begin to drive east with all possible speed. The lode in the rise in back of the adit is much the same as last stated; worth 3 cwt. of lead ore per fathom. The lode in the adit level east is about 4 feet wide, containing quartz and felspar, with a little lead ore, but for the present not sufficient to value. The lode in the west end is large, composed principally of quartz and blende, producing occasional stones of lead ore; altogether a promising lode. There is no change in the stopes east of the rise. No. 1 stopes are still worth 3 cwt. of lead ore per fm. No. 2 stopes are yielding about 4 cwt. of lead ore per fathom. We have about 20 tons of dressed ore in the storehouse, 1 ton in the bin, and about 1½ ton in course of dressing.

ALFRED CONSOLS.—M. White, T. Trelease, Oct. 21: Field's engine-shaft is sunk to the 100, and the men are now engaged opening plat at said level; the lode in the 130, east of this shaft, is just as for some time past. There is no change in the lode in the 120, west of this shaft. In the 120, west of the flookan, we are still driving north to prove if we have got all the lode. The north lode in the 120, east of Davey's engine-shaft, is just as reported last—worth 3 per fm.; the main lode in this level east is worth 40f. per fm. for copper ore, having an improving appearance; this lode, in the 110, at this shaft, so far as seen, is worth from 20f. to 30f. per fm. for copper ore; the north lode at this shaft, in the 110, is worth 15f. per fm. for copper ore. The south part of the main lode, in the 100, east of this shaft, is worth 20f. per fm. for copper ore; the north part of this lode, in this level, is worth 10f. per fm. for copper ore; this lode in No. 1 winze, sinking below this level, is worth 30f. per fm. for copper ore; this lode, in No. 3 winze, is worth 60f. per fm. for copper ore. This winze is sunk to the 110, at which point we have commenced to drive west, the lode is from 4 ft. to 5 ft. wide, worth quite 60f. per fm. All the other parts of the mine are just as for some time.

BALLYMOREEN.—W. Barkla, Oct. 17: In the 15 cross-cut, driving north, we cut a branch of sulphur yesterday, and there is more water coming out of the end than we usually have; driven since last report 4 ft.; total driven, 17 fms. 3 ft. 8 in. In the 15 cross-cut, driving south, we have still branches of spar and stones of copper; driven since last report 4 ft.; total driven, 16 fms. 4 ft. 3 in. The adit level, is without alteration since my last; driven since last report 3 ft.; total driving, 18 fms. 5 ft. 9 in.

BALLYMOREEN.—R. Fellow, Oct. 13: The engine-shaft, with the exception of a little increase of water, continues the same as last reported. No. 1 stope—a piece of ground 20 ft. long, 3 ft. wide, and 6 ft. high, left standing on the side of the north level, to get to the footwall of the lode—was set to six men, for 5f.; this stope yields 3 tons of lead and 15 cwt. of copper ore per fm., and is likely to improve. No. 2 stope continues the same as last reported, and yields 1 ton of copper and 15 cwt. of lead ore per fm. The rise to surface yields 8 cwt. of lead and stones of copper ore, but not to value. The air-shaft, sinking from surface to meet the rise, was set to four men, 6 ft. stent, at 3 per fm., yielding fully 10 cwt. of lead ore per fm., with good stones of copper ore.

BAMPFYLDE.—C. Hand, Oct. 22: No. 4 shaft is now down 19 fms. below the adit in old workings. The water is down 6 fms. below the 30, and we expect to resume work in the 40 on Oct. 22. The men have commenced again in the 30, and in the winze between the 30 and 40. The new lode is not looking so well as last week, being split into branches of 12 in., and 4 in. wide, with white killas between. This may probably cut out, and leave the lode larger as we get down.

BEDFORD UNITED.—J. Phillips, Oct. 23: There is no alteration in the 148. The lode in the 130 east is looking kindly, but not producing sufficient ore to save. The stopes in the bottom of the 115 west will yield 5 tons of ore per fm., and the stopes in the back of this level will yield from 2 to 3 tons of ore per fathom. The lode has not been taken down in the 115 west since last report. The stopes in back of this level continue to yield from 4 to 5 tons of ore per fm. The lode in the 103 west is 3 ft. wide, producing 3½ tons of ore per fm. The tribute department is much as usual.

BEDFORD CONSOLS.—J. Hodge, J. Mitchell, Oct. 22: Air Shaft Rise: We have to inform you that we effected a communication of the above on Saturday last, by which means we have now a good ventilation. The rise was all to the north of shaft, therefore the shaft was sunk on another lode, or the lodes have been driving the level and rising on must have made a splice; if so, the part we sunk on is certainly the main part, as at present in the bottom of the shaft the lode is fall 5 feet wide, and a better-looking lode cannot be seen, composed of beautiful gossan, stones of black and yellow copper ore, quartz, and pebble, and where we have peach we have the lode the shaft was sunk on underneath south much faster than the one we rose on, consequently this lode is still south of our crosscut driven south several months since; we therefore, purposed putting two men in this cross-cut, and drive south to cut shaft lode. The remaining six men we shall put to fix footway in the air shaft, and as soon as this work is completed we shall put a part of these in the cross-cut, and the others in the adit end with the rise men, and come to raise stone and prepare for sinking in bottom of the adit. We have taken off a large piece of heading in a field near the spot where the engine-house will be built, for a quarry, which has every appearance of being a good one. Nothing new in any other part of the mine. You shall be advised as we progress.

BODCOLL.—F. Evans, Oct. 17: The 10 west has been driven this week 3 ft.: total driven, 29 fms. 0 ft. 9 in. The lode is the whole width of the level, with more standing to the south; it carries lead throughout, and never looked more promising than at present. The shaft sinking in Tywyn is down 10 feet, but not yet to the rock; I shall have to get timber for the shaft next week.

BOG MINE.—E. Roger, Oct. 21: We have drawn to surface part of the tributary work, and commenced "sinking it this morning." The shaftmen are engaged repairing the adit level towards the old footway shaft, and when done there will be two good ladder-roads from surface to the adit level. The lode in the winze rising in the back of the 25 yard level is not so rich as it was last week, being now about 6 inches wide, work of a moderate quality, but the ground is very hard for rising. If there be not an improvement in this winze by the time their contract is fulfilled I shall alter their mode of working. We had the engineer on the mine last Friday. We think the old engine-house will do very well to place the new engine in, at which point we shall be able to command our work at Bunting's shaft, and also at the new engine-shaft, west of the present workings; this will be a great saving in buildings, as a trifles will place the old engine-house in a proper condition.

BOILING WELL.—J. Delbridge, Oct. 17: In the 60 west, on the north lode, the lode is 3 ft. wide, composed of blende, copper, and stones of lead ore. From the 60 cross-cut water is daily issuing, and the ground favourable. In the 50 west the lode is large and unproductive; in the 50 east the south lode is yielding stones of ore. In the 40 cross-cut, south of Austin's, no lode as yet, ground very wet. In the 30, east of ditto, the lode is 15 in. wide, yielding lead and blende ore, but not much to value. In the 20, west of ditto, the lode is 15 in. wide, composed of copper, lead, and blende. The 20 to 30 winze is in tribute ground. At Syrett's shaft, sinking below the 10, the ground is favourable, and expect to sink to the 20 in two or three days, and cross-cut south to the lode. Other things much as last reported. We purpose sampling 13 tons of lead this day, of good quality. Our copper sampling is looking small. We are expecting to ship our blende to Chester in the coming week—50 tons.

BRONFLOYD.—M. Barber, Oct. 22: The lode now being carried in the rise in back of deep adit, 4 fms. south of No. 2 shaft, is 6 feet wide, principally composed of slate, quartz, blende, and lead ore, yielding of the latter from 8 to 10 cwt. per fm., and is looking promising—prior to rising and stopping, 30c. per cubic fm. Our surface work is proceeding favourably, and the foundry people are busily engaged erecting the machinery.

BRYNTAIL.—J. Roach, Oct. 22: There is no material alteration in the lode in the 10, driving east of cross-cut, since last reported upon. It still produces fine stones of ore, and a regular brassy, 4 in. wide, containing good ore; the remainder consists of blende, barytes, and flookan; altogether it is of a very promising character, and the strata through which it traverses are very congenial for lead ore. It must be borne in mind that the level is driving into virgin ground, of which we have got about half a mile in length; this, undoubtedly, large deposits of ore will be found.

BULLER AND BERTHA.—J. Hamby, Oct. 21: The lode at the engine-shaft has improved in the last 6 feet sinking, and is now about 4 feet wide, and a very kindly lode for copper, but I do not expect to sink much more before the engine is set to work; and while the engine-house is completing, and the engine putting in order, the men will be employed collaring-up the shaft and getting the pitwork in order, so as to lose no time in sinking as soon as the engine is set to work.

BUCHI CONSOLS.—R. Northey, Oct. 19: The lode in the 60, east and west, is very large, and of the same character as last reported. The ground in the 50 west is still good for progress, and we see occasionally some spots of lead, but the lode at this point is not well defined, being a ground influenced by the cross ridge seen at surface, running in a northerly and easterly direction. No. 1 stope is again in course of working, but our progress will not be so good for some time, as we have some difficulty in putting in staves, &c., to work on. The lode in No. 2 stope is worth 7 cwt. per fm. The lode in the 27 is 2 ft. wide, and occasionally spots of lead. We are drawing and clearing as fast as possible for another sampling. The lode in the back of the 40 is worth 10 cwt. per fm.

CAMBORNE CONSOLS.—Wm. Roberts, Oct. 20: In the 33 and the 20 fm. levels west the lode improved in size; it is now 1½ foot wide, occasionally producing stones of ore. Other parts are without alteration.

CARADON CONSOLS.—Wm. Rich, Oct. 21: We have received a portion of the earnings from the foundry, and have completed the lift from the 27 to the 38. I am daily expecting the remainder of the pump as soon as we have them no time shall be lost in sending them down and fixing. I calculate it will take about a week to complete it; we shall then be in position to resume the clearing of the 38 north.

CAEVANNALL.—W. Roberts, Oct. 20: Nothing new since last reported.

CASTELL.—J. Lester, Oct. 19: The crushing-mill, since we repaired it on Monday, has been working very satisfactorily. The blende being intermixed throughout with quartz, &c., has to be crushed rather small to make it separate.

COLACOMBE.—S. Mitchell, Oct. 20: During the last week the 72 fm. level, west of the western shaft, has been driven 9 ft., and a good improvement has taken place, the lode being 4 ft. wide, composed of soft quartz, capel, prian, and from 2 to 3 tons of rich ore per fm. The lode in the back of the 62 fm. level has been put up 4 ft., and the lode worth about 1 ton of ore per fathom. The 49 fm. level, west of the western shaft, has been driven 3 ft.; the lode is worth about 1 ton of ore per fathom. We hope to sample about 100 tons of good quality ore for the present month.

COLLEGEMINES.—A. Braithwaite, B. Tucker, Oct. 20: We have cleared and repaired the 20 fm. level up to within about 2 fms. of the forebreast. The 10, driving south, is much improved; we expect a bunch of lead after a few more feet of driving, as there is a fine stream of water coming from the end. In cross-cutting east in the 10, we have reached the hanging wall; we have set the men to drive north on the lode, which is looking kindly, but not much ore at present. Copeman's winze is down about 3 fms.; the lode is not looking quite so well as it was: we have not taken it down yet, it being wider than the shaft. The pitches are much the same as last reported. We have sold upwards of 5 tons of lead, and shall have another 5 tons ready in the course of a few days.

CWM DAREN.—J. Humphreys, Oct. 19: We are driving with two men the 10 fm. level west; the ground is very poor, but we hope it will improve. We intend taking the water out of the winze in another shaft (erag yr swin), to see if anything can be done there to advantage.

CWM ERFIN.—Oct. 20: The stopes over the back of the 60 is worked up to the bottom of the 57, and the end of ground standing east looks poor; but, judging from the ground passed through in the 57, we might expect more productive ground in this section of the mine; an intermediate level will be put in to prove its value. The lode in the 57, going east from drawing shaft, is 4 feet wide, composed of clay-slate,

spar, blende, and spots of lead ore. This level is now being driven by six men, and about 8 fms. remain to bring us under the ore ground met with in this level above. The 45, going east of cross-cut, has again improved since last report: lode all the width of the end, and yielding full 1½ ton of lead ore per fm.; this end is now full 10 fms. south of the north workings. The stopes over the back of this lode, east of the junction, yields on an average 8 cwt. of lead ore per fm. The stopes over the back of ditto, east and west of the cross-cut, yields ½ ton of lead ore per fm. The stopes over the back of ditto, and 10 fms. east of the cross-cut, yields on an average, for the length of the slope, 1½ ton of lead ore per fathom. The lode in the 32, going east of the cross-cut, is all the breadth of the end, composed of clay-slate, carbonate of lime, blende, and lead ore, yielding 15 cwt. of the latter per fm. The same level is being extended west of the cross-cut; the lode is 5 ft. wide, composed of the same material, and yielding 1 ton of lead ore per fathom. We sample this day 45 tons of good quality ore.

CWM SEBON.—J. Boundy, Oct. 17: The engine-shaft has become a little harder, which impedes our progressing on as fast as we could wish; the lode still continues in size, and has improved in value since my last, worth at present 9 cwt. of ore per fm., and looking kindly for a further improvement. The lode in the 60 end west is much of the same character as last reported. The lode in the 30 cross-cut at present is small, but looking very promising—much of the same character as the lode the tributaries are working upon in a pitch above this cross-cut; the lode in this pitch will yield 12 cwt. of lead ore per fm.; working by six men. No alteration in any other part of the mine since last reported. The dressing is going on regularly.

DALE.—R. Ninnes: The sinking of the winze below the 32 is progressing favourably. No. 3 lode in the level going south, is rather improved since my last.

DAREN.—J. Humphreys, Oct. 19: Francis's Level: There is a gush of water from the forebreast of this level; an additional proof that valuable ore cannot be far off. The underground tributaries have nearly finished dressing their several parcels of ore. Waste Heap: About 50 tons of picked stuff have been carried down to the crusher, at the expense of the tributaries, and dressed. This large quantity produced only 1 ton 3 cwt. of clear lead ore, a result that leaves the tributaries so little, after paying carriage, that they are taking another bargain. I intend to sample, on Friday next, all the ore that will be in the bin; it will not exceed 14 tons.

DENHAM BRIDGE.—J. Hamby, Oct. 22: Since we stopped stoning the back of the adit level on tribute we have cleared out the adit, and commenced driving the main level; we have cleared out the north lode, and for this distance the lode is of the same character as last reported. The lode in the 60 end west is small, but looking very promising—much of the same character as the lode the tributaries are working upon in a pitch above this cross-cut; the lode in this pitch will yield 12 cwt. of lead ore per fm.; working by six men. No alteration in any other part of the mine since last reported. The dressing is going on regularly.

DEALE.—R. Nine: The sinking of the winze below the 32 is progressing favourably.

DENHAN BRIDGE.—J. Hamby, Oct. 21: The engine-shaft we have been sinking by the side of the lode this last week; no change in the ground to notice. In the 50 cross-cut north we have cut the south wall of the lode, and broken some good stones of ore, but are not able to say anything about its size or value until another week. The stopes in the back of the 40 are still looking well on the south part of the lode, and the ground is favourable for breaking. Our pitches are yielding some good work for copper.

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NORTH BULLER.—Thos. Glanville, Oct. 14: We have cased and divided Louis engine-shaft from the 65 to the bottom, and made all complete for drawing through. The men have commenced to drive the 73 cross-cut south towards the south lode. In the 50 cross-cut, south from Wheal Uay, no lode has yet been intersected.

NORTH FRANCES.—The lode in the 48 is 3 ft. wide, worth 154 per fm.; we have almost got to the point of the horse, and then we expect the lode to be richer. The lode in the stopes in the bottom of the 36 is 3½ feet wide, worth 154 per fm. In the 45, east of Eales's, we are cutting into the north part of the lode. In the 36 west the ground is very much altered, we think it is near the cross-course; there is a little yellow ore in the lode.—Oct. 17.

NORTH LAXEY.—R. Rowe, Oct. 17: I have been at the above mine, and closely examined the operations. The lode in the adit level, driving north, keeps its size, but there was nothing beyond it. In the 12 north we have still a string of ore (continuation of that handed to you, and described by Mr. John Hitchens), but this is found on a well-defined wall 9 feet to the west of the regular lode, which is poor; I begin to think now that the whole width is the lode, as the two walls (hanging and lying) tend towards each other in depth. The very same state of things is in the 12 driving south, which of late has been poor; the end, however, to-day is worth ½ ton of ore to the fm., but the lode is divided, there being a horse of rock between the two producing parts, varying from 4 to 6 ft. in width, but the two underlies show that this will cease in depth. In the adit level, immediately above this end, we had no ore until we met with the first south-east canister vein, and, by exact measurement, I see we have yet to drive the 12 south 7½ fms., before reaching that point, I shall be indeed disappointed if we do not then find something very good.

NORTH TAVY.—R. Williams, Oct. 22: The prospects here are still good. The stopes in back of the 20 improves as we descend. I have again opened on the lode in places in the 30, and find it to produce good working for tin. The whites produced from the stamping are now in course of burning, and in the course of a few days—say, a week—we shall be able to convince those who doubt that the tin in this mine is not produced by imagination. The necessary levelling for levels, to bring home the water to the mine, is being done, and we shall be in a position to state the amount of water we have.

NORTH WHEAL WREY CONSOLS.—An engine-shaft is sunk on the course of the lode about 28 fms., from surface, which is about 20 fms. perpendicular, through a strong and rich looking gossan lode, averaging about 3 ft. wide, and is now in course of sinking, where they have a good lode in the bottom of the shaft, composed of gossan, fluor-spar, capel, and silver-lead ore, and promises to turn out well. They are about to commence driving the 20, where you may expect a productive lode in a short distance driving north. The 10 has been driven north of the shaft about 30 fms., through a most promising lode, averaging 3 feet wide for the whole drivage, producing a splendid gossan, which is interspersed throughout with carbonatite and sulphurite of lead, producing fine stones of the latter; this level must shortly improve, as there are some rich branches making their appearance in the end, which will shortly unite with the main lode. In the winze sinking below this level they have a good lode, and are raising some good work for lead; this winze will be down to the 30 soon after the level gets under, which will open a great many fathoms of ore ground, and enable you to make some good returns. On the whole, I have no hesitation in remarking that your prospects are highly encouraging at so shallow a depth, and presenting indications second to none of the mines in the neighbourhood; you may, therefore, look forward, at no distant period, to having a valuable mine; otherwise it will be an exception to the general features of the productive silver-lead mines in the district.

OLD TOLGUS UNITED.—G. Reynolds, Oct. 17: The lode in the 32 west is much improved, and has a very favourable appearance to become productive even at the present depth; I value it at 61 per fathom. The lode is decidedly improved over the shallower level, and has become more masterly in its appearance; the lode is 3 feet wide, and yields more ore. I look forward to still greater improvement eastward in this level, and the other points of the mine are without alteration, but looking highly promising.

OLA.—C. Crease, Oct. 21: We continue sinking the engine-shaft—ground much as last reported: the water is getting still quicker. We have a good lode in the winze; we broke nearly a ton of good ore this week; also very good stones of copper. We are much inconvenienced for want of two miners to go in the shaft; then we could put two of the men we have in the shaft in the winze, in order to get more lead to help out the cost.

PEDN-AN-DREZA.—Captains Carpenter, Dolbridge, and Thomas, Oct. 19: In the 90, east from engine-shaft, on Martin's lode, the lode is harder, with greater indications of bordering on the junction of granite—not quite so good as last week, now worth 55 per fm. In the 80 east, east from engine-shaft, on Martin's lode, sinking in the south part, the lode is 4 ft. wide, with a little granite, not quite so good for tin; how wide the lode is standing to the north is unknown. We expect to hold to the 90 in two months, when we shall lay open a valuable part of the ground, having driven 5 fms. in length at the 90. The stopes in the back of the 80 are much the same as last reported; worth 304 per fm. The ground being so very hard for cutting at the 68 for the new bob, we cannot make that progress we otherwise should. We have bored a bore-hole in Bragg's shaft, and can hear it very plain in the end at the 40; the end is not extended quite as far as the shaft; we should have bored long before this, but for want of air; we are expecting to do so shortly. We have nearly cut the ground at Cobber's shaft for a set of rolls, and as soon as the shaft is bed-planked down to the 40, we shall be able to draw from that level. Our tribute stopes are much as usual, yielding about the same average quantity of tin-stuff.

PEMBROKE AND EAST CRINNIS.—John Dale, G. T. Trewren, Oct. 21: The ground in the 103 cross-cut, driving north and south, is without alteration to notice since last report. In the 112, east of Smith's shaft, the lode is of a promising character, producing good saving work, and letting out a quantity of water. In the 100, east of Smith's shaft, the lode is increased in size and quality, being now 3 ft. wide producing 2½ tons of ore per fm., of fair quality. The lode in back and bottom of this level will yield 1½ ton of ore per fm. In the stopes in bottom of the 90, east of Smith's shaft, the lode is 5½ ft. wide, worth from 154 to 181 per fm. We sampled yesterday, 144 tons of ore, of fair quality, 65 tons of which were raised from the eastern ground, corroborating our former statement, that this ground would open out well.

PENDEEN CONSOLS.—W. Eddy, Oct. 16: To-day being setting and pay-day, we have set the 82 north and south to drive by nine men, and shaft-plat to cut. The 70 end to drive by six men, end 9 ft. high, and to carry all the lode; in this end there is a great improvement in the lode, of some very rich grey ore. We have in this level also set a winze to sink by four men, where we shall break some very good ore. We have set the winze below the 51 to sink by four men; this winze is now down 6 fms., we have 8 fms. more to sink; this winze is very much wanted to be sunk through in order to ventilate our 70, which is very hot, and coming down right over the ore, but on the east lode, and will intersect the western lode about 4 fms. deeper. The winze below the 42 we have also set to sink by two men and one boy; this winze is now down 9 fms., and will be sunk through to the 54 this month, which will make our double ventilation good to the 54 and two footways.

POLBREEN.—Tregay's lode in the 12, west of the engine-shaft, is still very small—not more than about 6 in. wide, and it has been small all the month, but continue to yield some very good work. Doreas's lode in the 22, east of Doreas's shaft, has been small also; soon after sending you my last report the lode became very small—not more than 4 in. wide, 2 in. of it very good, but in taking it down last night we find there is a part of the lode standing behind the part we have taken down for 8 or 9 in. wide, and the lode now in the end is 2 ft. wide, 1 ft. of which is very good work; I consider the end to be worth full 154 per fm. The end is quite dry, which, I think, is a strong evidence of there being a large lode before us; there is a large stream of water flowing out of Doreas's shaft in this level, which is not more than 2 feet below the bottom of the end. Tregay's lode in the winze sinking below the 12, west of the cross-course, and a little west of the engine-shaft, is still small, but yielding some good work. There has been about 3 fms. sunk since setting-day, which makes the winze more than 5 fms. deep. We are anxious to see that the lode makes down so deep as the 22, as it has been reported to be split into branches and dwindled to nothing in going down. In sinking 2 or 3 fms. more, if nothing is found to be the lode or disturb it, we shall be able to see pretty clearly where to drive in the 22 to find it. We have not yet seen anything of Bowl and Butz's lode in the 32 cross-cut; there is only a man and a boy in it; the ground is improving, and is being driven at 4½ per fm. We have set another pitch this week in the 12, west of the engine-shaft. There are three pitches now working, all of them in the old ground. We have this week set the carriage of the tin-stuff to the stamps until midsummer next, at 11½ d. per ton, and next week shall begin to carry it down, and after a few more showers shall begin to stamp.

RIVER TAMAR (Limited).—J. Cock, Oct. 20: We are progressing favourably in sinking the engine-shaft; the character of the ground is very favourable for the production of copper ore; it contains bronzites of munde, and copper ore dipping towards the lode, and there is every reasonable hope that at the next level the lode will become remunerative. The shallow level is being driven in a fine stratum of killas towards the junction of two lodes; this is important, as it is entirely untried ground.

SITHNEY WHEAL BULLER.—S. J. Reed, Oct. 17: The eastern shaft has been cleared a little more than 20 fms. from surface, where we have found a level containing water, which I think is the adit. This has obstructed our progress here, until the adit is sufficiently cleared to let the water down, which, I have every reason to believe, will be effected in a short space of time. We have now directed our forces to the clearing of the adit, which we are progressing favourably with, and expect by the middle of next week to have cleared 200 fms., which I have set to nine men to complete for 61. There is no alteration to notice in the 60 east, on the new south lode, driven 5 ft. 6 in. I have set a pitch to four men, in the back of the 60, on Schneider's ledge, at 18s. 4d. tribute.

SORTBRIDGE CONSOLS.—J. Richards, Oct. 22: The sinking of Hitchins's engine-shaft is progressing favourably; the lode is without change. In the 62 west the lode is large and promising, and yields good stones of ore occasionally; in the 62 east the lode is 6 ft. wide, composed of capel, quartz, munde, and ore—exceedingly promising. In the 50 west the lode is 2 ft. wide, containing quartz, munde, and a little ore; in the new winze sinking below the 50 east the lode is in a good course of ore, worth for the length of sink (9 feet) 4 tons per fm. In the old winze sinking below the 50 east the lode is worth for the length of sink (9 feet) 3 tons of ore per fm.; the lode in the stopes in back of the 50 east is worth 3 tons of ore per fathom. In the 49 west no lode is as yet met with.

SOUTH BEDFORD CONSOLS.—J. Phillips, Jun. 22: The lode in Red Whim-shaft is a little improved in appearance, being 5 feet wide, and yielding good saving work. In the 62 east the lode is 2 ft. wide—saving work; in this level west the lode is 3 feet wide, and worth 3 tons of ore per fm. In the 36, driving east, on the south side, the lode is 2 ft. wide, producing good stones of ore, and very promising.

SOUTH BOG.—S. Morris, Oct. 22: Since my last the lode in the 45, driving south, is much increased in size—being now full 4½ ft. wide, composed of a beautiful gossan and prian, producing occasionally solid lumps of lead ore; the ground in this end is become very easy for driving, and we are now compelled to use timber. The lode in the 45 end, driving north, is rather small, being not more than 2 ft. wide, composed of spar, and spotted with lead, and the ground continues strong for driving. There is no alteration to notice in the stopes in the back of the 35 since last reported.

SOUTH CARN BRAE.—T. Glanville, Oct. 20: Nothing new since our last. **SOUTH CRENVER.**—J. Dolbridge, E. Chengwin, Oct. 19: The lode in the 24 rise, west of the flat-rod shaft, is 2½ ft. wide, yielding 2½ tons of ore per fm.; in this place of ground we have yet to open on 130 and 250 fms. in whole; from which we calculate to obtain as much ore as from the ground taken away, which has yielded 2 tons per fm. In the 34 west the lode is 2 ft. wide, yielding 1½ tons per fm.—In the 44 west the lode is 1 ft. wide, yielding stones of ore; in this level we have a large quantity of unworked tribute ground. In the 54 west the lode is 3 ft. wide, yielding 1½ tons of ore per fm. In the 74 west the lode is 2½ ft. wide, yielding 2 tons of ore per fm.; in the back of this level we have ground standing in whole so high as the 54, and for the last 55 fms. in driving the lode has been productive and yielded 1½ to 2 tons of ore per fm. for the whole length, and still opening well. In the 84 west the lode is 1 ft. wide, yielding stones of ore. The 94 west is yielding 2½ tons per fm.;

this is standing in whole to the 84, from which we expect good returns of copper ore. The 94 rise is worth 2 tons per fm. The winze sinking in the 84 to 94 is worth 1½ ton per fm. The 105 is yielding stones of ore. In the flat-rod shaft the sumpmen are still cutting the plat, and we expect in two weeks to complete it. We have despatched a 10-ton boiler from Harvey and Co., price 214, per ton, to be delivered on the mine in a month. Our tribute ground is looking a little better.

ST. AUSTELL CONSOLS.—H. Williams, Oct. 17: We are progressing favourably with our cross-cut through the elvan course in the 25. Our stopes are without change of importance; some are improving, others not quite so good. I am making the necessary preparations in the western part of the mine to raise and send away large quantities of tin-stuff. The lode in the 35 is producing some good stones of tin. Our new stamp is in a forward state. We shall now very shortly be reaping the benefit of the new stamp.

TAVY CONSOLS.—R. Williams, Oct. 22: The shaft is now down near 3 fathoms below the 50; the ground continues favourable and congenial. The several stopes in the mine, on the whole, continue without any material alteration, and the next sampling will, in all probability, be about equal to the last. We have not been able to do much to the sampling lately, being busy drawing and crushing; but what we have stamped we shall, in the course of a week, calcine, to fully prove the quantity of tin it contains. As soon as the sampling is over we shall have down the new plunger-lift to be fixed in the 50, after which the driving of that level cast will be resumed.

TREGARDOCK.—Thos. Goldsworthy, Oct. 31: The lode in the shallow adits in the 50, east and west of the winze, is worth 1 ton of lead per fm.; in the back of this level, and west of the winze, the lode is worth 1½ tons of lead per fm.

TREWAREN UNITED.—R. Reynolds, Oct. 20: The lode in the 30, in the north end, is increased in size since last report; it is now 3 ft. wide, composed of spar and capel, intermixed with lead, and letting out plenty of water. Nothing new in shaft or adit.

TREWETHA.—T. Richards, W. Rowe, Oct. 22: In the 70 south the lode is worth 41 per fm.; the north end is much as last reported. The 60 north is worth 31 per fm. The 50 north is producing some saving work. Some of the stopes having fallen off in quality are suspended; those now working are yielding tolerably fair quantities of ore. We sold, on the 13th inst., 21 tons of crop ore, to Messrs. Sims, Willysams, and Co., at 28s. 3d. per fm.

UNITED MINES (Tavistock).—J. M. Champion, Oct. 20: We are still looking well in our 36 fm. level; the lode is worth 202 per fm. for fm. for fm.; we have driven on our course, east from the engine-shaft, 11 fms. 3 ft. all of which is good tribute ground, and I am glad to say the lode is very much improved in the 36 to what it was in the 28 fm. level. As I have before stated, I would sink the engine-shaft to another level, and lay open backs, and I believe it would then pay the adventurers for their outlay. The pitches throughout the mine are turning out fair quantities of tin for the men, I hope, to get wages. We have a new set of launders completed for the water stamps. We have now in the course of completion a round puddle; there will then be two on the mine. We have sampled for the last two months, from the tributaries' raisings, full 9 tons of tin, but we are not in a position to return it; the water has been very short with us, but I can say the 9 tons of tin have been raised.

VALE OF TOWY.—S. Harper, T. Harvey, Oct. 20: Clay's engine-shaft is sunk 8 fms. 3 ft. below the 50, the ground is much the same as last reported. From present appearance we hope to reach the 60 in about a month from the present time.

The lode in the 50, north from said shaft, is 4 ft. wide, greatly improved in the past week, yielding from 12 to 14 cwt. of lead per fm., and promising a further improvement.

In the same level, south of said shaft, the lode is 4 ft. wide, still continuing to produce fine lumps of lead. The pitch in back of the 50, south of said shaft, working by four men, at 25s. per fathom, is looking well.

The lode in the 40, north of Bonville's shaft, is 3 ft. wide, producing 5 cwt. of lead per fm. The lode in No. 2 winze, sinking below the 40, north of Clay's engine-shaft, is 2½ ft. wide, yielding 6 cwt. of lead per fm. No. 2 winze, in bottom of 20 fms. north of Bonville's shaft, is hoisted to the tribute backs, which is greatly improved the pitches for air, and other conveniences for working. The lode in the 10, north of Bonville's shaft, is 1½ ft. wide, mixed with spots of lead, but not to value. In sinking Bonville's shaft below the 40, the lode is 4 ft. wide, of much the same character as reported last week. In driving the 40, south from said shaft, no alteration to notice in the past week, lode 2 ft. wide, producing 7 cwt. of lead per fm. We are getting on well with drawing the stuff from the ends, &c., which was occasioned by replacing the boiler at the steam wharf. The ground is favourable for driving the 20, west on cross-lode, at Clay's engine-shaft.

VENTON.—T. Richards, Oct. 15: Good progress is still being made in the cross-cut, and we have lately been passing through some floors and patches of elvan, which may be considered a good indication.

WEST BASSET.—W. Roberts, Oct. 20: Our operations are progressing satisfactorily, but without any particular improvement since last reported. We expect to have a good sampling on Oct. 28.

WEST CRINNIS AND WHEAL REGENT.—John Webb, Oct. 21: The shaftmen are busily engaged putting the dam in the 40. We are getting on well in clearing the 40, east on Bell's lode; we shall lay open a great deal of ore ground here shortly. The 20, on Bell's lode, is producing good ore work, and most of the tributaries getting good wages. We are clearing out the 30, at Bowe's shaft, where we shall soon have several new pitches to set in. In the 40, at flat-rod shaft, we are putting in tramroad to extend to the western part of the mine, where we have much tribute ground. We find more and better ore ground in and about the 40 than I expected, and taking into account the extent of these united sets, the several ledges falling into each other in depth, and having the benefit of eight good working shafts (besides the new engine-shaft), and a good plant of machinery, any miner must certainly entertain an opinion that when the mines are thoroughly cleared up and the ledges laid open liberally dividends will be realised.

WHEAL ARTHUR.—T. Carpenter, Oct. 10: We have cut through the cross-course in the 50 west, where the lode is 2½ ft. wide, composed of spar, munde, and copper ore. The ground in the 50 fm. level, cross-cut south is more favourable for driving, and letting out more water. We have cut through the lode in the 40, east of great cross-course, which is 13 feet wide, composed of spar, munde, peach, and stones of copper ore. We intend driving a few fathoms by the side of the lode before we cut through it again, as we expect it will be more productive when we get clear of the cross-course.

WHEAL EDWARD.—M. H. East, Oct. 17: North Lode: The lode in the 71 east is not sufficiently cut through so as to ascertain its size and value, but, as far as seen, it looks promising. The lode in the No. 8 winze, sinking below the 62 east, continues in a disordered state, but is yielding more ore at present than it has done for the last 8 fms. sinking; it is now worth from 4 to 5 tons per fm. The lode in No. 9 is yielding about the same quantity. The lode in the 62 west is not so large as when last reported on; it is now about 5 feet wide, and assumes a healthy appearance. There is no change in either of the other western levels worthy of any particular remark. The stopes in the back of the 62 east continues worth about 3 tons of ore per fm., and the tribute department looks well.—South Lode: The lode in the 61 east is a little improved, and is worth at present 6 tons of ore per fm. The lode in the 61 west is worth about 5 tons per fm., and fair progress is being made in driving. From the present appearance, our next sampling will be very satisfactory.

WHEAL EMMA.—J. Hitchins, Oct. 20: The engine-shaft is now 2 fms. below the 34, and we have this day let the whole lift to the 45 to sink at 17½ per fm. The lode in the bottom is from 4 to 5 ft. wide, a flukan to the south, and on the footwall an ory branch, good work, from 12 to 14 in. wide. The 34 is driven from 2 to 3 fms. west of the winze, which is hoisted, the lode worth about 1 ton of ore per fm., and driving at 5½ per fm. Tributaries working with spirit and effect, from whom and the owners' ore we hope to have a good perch this month.

WHEAL EMMA.—J. Hitchins, Oct. 22: The 34 end is again improved, and likely to become better. The 22 is re-set to-day at 4½ per fm., rather improved in appearance. The branch in the engine-shaft is to-day seen quite as good as before, and 2 ft. deeper; this is a main feature. Upon the whole, our mine never looked better at this moment.

WHEAL EMMA EXTENSION.—Jehu Hitchins, Oct. 22: Robins's shaft is now down about 2 fms. on the lode; in the bottom it is rather disordered by a cross-capely branch or cross-course, it however yields good stones of black ore. We have put up a whin to notice in the underground operations.

WHEAL GUSKUS.—J. Richards, Oct. 20: Our new shaft, sinking on the new lode, is progressing satisfactorily; we are sinking at the rate of 2 fms. per week. The new l

THE RATING OF MINES QUESTION.

The evidence taken before the Select Committee was fully reported in the *Mining Journal* during the sittings; but as the official minutes have just been published, we make further remarks upon the position of the question, in order that those concerned may fully comprehend the adverse arguments when called upon to uphold what they deem to be their rights. In favour of taxation, it is asserted that it is extremely anomalous and unjust that iron mines should be exempt from rates whilst coal mines pay them; that greater profits are derived from iron mines than from collieries; that there is an unjust burden upon other parishioners in consequence of iron mines not paying towards the support of their own poor; that there is equal certainty and profit in working ironstone and coal; that the present system is unsatisfactory, but would be less so if iron mines were rated; that there is equal reason for rating iron and coal mines; that the hardship of the rate on collieries is aggravated by the exemption of iron mines; and that iron-mines should not be exempt from both poor and highway rates.

Against the levying of the tax, it is argued that the rating of iron mines in South Wales, as the collieries are rated, would be prejudicial to the mining interests, and very impolitic; that it would be a very serious tax upon iron mines in Wales if rated to the poor; the amount, if the rate were 4s. in £s., would be rather more than 1d. per ton; that there would be excessive burdens upon leases in Wales if, in addition to the present very heavy tax or poor-rate upon coal, there be a similar rate upon iron; that a rate upon ironstones would constitute an additional anomaly; that iron-works at present are very heavily rated, and any additional charge would be very severely felt; that a strong objection to a rate upon Welsh iron mines was the inability of mines to bear any increase of burden; that it is impolitic as well as unjust to extend the iron-mines rating system; and that there was greater expense and hazard in getting ironstones than coal.

These items, as will be seen, refer to iron-mines only; and, although the adventurers in all mines are equally interested with the owners of iron-works, very little trouble appears to have been taken to ascertain the views of those connected with copper, tin, and other mines. Speaking of lead mines, however, Mr. Sopwith stated that the mining population did not, to any great extent, become a burden upon the poor-rates; and that a rate upon the lead mines in Allendale and other districts would be very detrimental to the mining interests, and would check investment of capital and employment. These are just grounds for assuming that the Legislature in the time of Elizabeth intended to exempt lead-mines from poor-rates.

On account of the risk and uncertainty, it is perfectly fair that lead-mines should be exempt. This appears to be nearly all the evidence received against levying the tax upon metallic mines other than iron, which probably arises from the class of witnesses called.

The principal witness from Cornwall were two China-clay merchants from St. Austell, who, because their taxes are heavier than they feel disposed to pay, are anxious that the mines in their neighbourhood should be rated.

Now, as the Chairman of the committee is a Cornishman, it would have been supposed that the test he could do would be to use every exertion to secure his constituents' fair hearing; least, upon referring to the names and addresses of the witnesses, we find that of the 266, 15s. 6d. paid to witnesses whose evidence was taken, out 34s. 6d. fell to the lot of persons summoned from Cornwall. We leave others to judge how far there will be justice in drawing conclusions from evidence thus taken.

THE SUBWAYS OF LONDON.

The Committee appointed by the Metropolitan Board of Works to consider and award prizes in respect of designs for subways submitted to them, discussed the merits of the several propositions sent in, on Oct. 19 and 20, the result being a report, stating that "the difficulties in the way of arriving at a satisfactory decision have been very great; no general principles were found to apply, nor was it possible either to approve or condemn all the parts of any of the designs submitted to competition. They have, therefore, selected those designs which appeared to them to be most susceptible of such practical adaptations as would render them most generally applicable to the circumstances of the metropolis." The feature common to nearly every design appears to be a central tunnel; and in the majority of instances there is so great an attempt at utilising every part of the space which the designers have to deal with, that the streets constructed according to their ideas would be little less than a series of viaducts; and taking the traffic of an ordinary second-class street—Moorgate-street, for example—as a basis for calculations, there can be little doubt that the expense of building the arches would, from the great strength required, be immense.

The names appended to the report are those of Messrs. R. Stephenson, T. Hawksley, G. Lowe, T. H. Wyatt, J. Thwaites, W. Cubitt, A. Wright, J. W. Basalgette, and F. Marsbrough, and it would have been supposed that error in the judgment of such a combination would be almost impossible; yet, upon looking at the names of the successful competitors, we find that the first prize, of 100 guineas, is awarded for a design that is a very near copy of Mr. Jasper Rogers's plan, which has long been before the public. Now, there can certainly be nothing to justify such a decision, as it is an imitator is placed prominently forward, whilst the claims of the real designer are the more certainly consigned to oblivion.

Our readers are no doubt aware that Mr. J. Rogers and Mr. W. Austin have for a lengthened period endeavoured to prove the necessity for a comprehensive system of subway; yet, although a design was sent by the latter gentleman, we regret to find it has not been deemed worthy of any acknowledgment whatever. The fact of his providing a roadway within his tunnel might have been regarded as a sufficient reason for this, were a roadway considered unnecessary; and if there had been any design capable of application without modification, but as none were perfect, we contend that there is less modification required in Mr. Austin's plan than in several of those in the prize list.

However, the awards are made, and we can, therefore, but consider them as affording an additional proof of the difficulties which beset inventors, and of the facilities offered to copyists for carrying off the laurels which justly belong to others. The successful competitor was—for a first-class street: Messrs. H. D. Davis, Maida Hill West, 100 guineas; J. T. Knowles, Gray's Inn, 50 guineas; F. and A. Warren, Adelphi, 10 guineas; and for a second-class street: Messrs. W. H. Cullingford, Fenchurch-Villas, Baywater, 50 guineas; W. Reddall, Chapel-place, Poultry, 20 guineas; and Hughes and Hopkins, Park-street, Westminster, 5 guineas. It cannot be denied some of these are both original and practicable; but the relative importance which has been attached to the several designs has caused the utmost astonishment to all who are not fortunate enough to know the grounds upon which the prizes were given.

ELECTRIC LIGHT.—We learn that the launch of the *Great Eastern* steamship, which it is expected will take place early in the coming month, will be effected under the brilliancy of the electric light, as far as the moving of this wondrous iron monster is done during the night, and which must occupy a considerable portion of the darker hours, seeing that it will require a period of at least sixteen from the moment of her first leaving the upper stays or cradle, until she quietly rides in her future element. It is to be presumed, therefore, that the commencement will be during the night, that her final glide into the river may be witnessed by thousands in the clear light of day. The use of the electric light will, therefore, be of great moment in this important operation in which, it may be said, the whole nautical world is interested. On the other hand, it will fully test the merits of the various improvements made in this system of removing darkness, for, if the lights to be erected burn steadily and brilliantly throughout the night, they will meet the requirements of the Trinity House, as respects the illuminating power for lighthouses. The brilliancy of the electric light has never been questioned, and the great difficulty hitherto has been in securing density and steadiness. These points are overcome, we are assured, by the application of mercury instead of carbons, and that a lunar light, pure, dense, steady, and continuous, is now obtained. This, as we have already said, will now be fully and publicly tested. The point to be determined is even of more universal interest than the *Great Eastern* steamship itself; for, if what is represented is established beyond controversy or dispute, a great national boon will be secured. Nothing can be of greater value to this country than an efficient and powerful light for the coast. Those now in use are not sufficiently effective, and during fog and severe weather, are frequently useless beyond the immediate precincts of the light-houses, whereas the new light—the mercurio-electric we suppose it may be called—is unchangeable in colour, and its penetrating powers in fog and thick weather are represented as perfectly extraordinary. Little has been said or known of this new plan of overcoming the difficulties which carbon light presented, but the discoverers have been persevering in their trials and tests, so as to make every point perfect before its exhibition to public display. We understand that the discovery is due to Professor Way, but that other gentlemen identified with the prosecution of the question of electric light have assisted in bringing the matter to its present state of perfection. The test to which it is to be put is a bold one, and is of itself an earnest of the sincerity of those who consider it perfect for all useful purposes. We trust their efforts will be crowned with success as brilliant as their own light, not only on their account, but as a matter of national import and interest. It will be a grand feature indeed in this extraordinary feat of launching this monster ship.

THE COPPER TRADE.—A well-informed correspondent, writing from Frano, yesterday, says—"I am afraid, from what I hear, that the smelters are about to drop the standard again considerably."

The Birmingham Journal of this day (Saturday) says:—

"The metal market is depressed, and has been so for the last three weeks, in consequence of the suspension of orders from the East, and the unfavorable news from the United States; in this respect there will be no improvement until the important markets referred to resume a more healthy position. In metals generally there has been little speculation for some time, consequently that rate at which interest may rule has very little influence. As regards Scotch pig-iron the market is in a very quiet state; the demand for Swedish iron and steel is limited, but of the latter there is said to be not a great deal in the market. Copper has been in rather less demand, and smelters now sell readily at current rates; but of the manufactured article they are said to have considerable orders in their books; 110m. was offered and refused in the middle of September for Chilean slab, under the belief that English was on the eve of an advance; but this impression having passed away, buyers have dropped to 110m., which holders have not been disposed to accept. Fine Australian is reported in fair request, at 120m., at which quotation sales have been lately made."

IRON MANUFACTURE.—The total quantity of Pig-Iron manufactured during the year 1856 was 2,626,377 tons, the produce of the following number of blast furnaces:—

England	Tons	324
Scotland		127
Wales		171
Total.		322

The Spanish Government have established an agency in London for the sale of quicksilver from the mines of Almaden. Various opinions are expressed as to the advisability of the scheme, but what the ultimate result will be, is, of course, at present unknown.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET, London, October 23, 1857.

COPPER.	S. s. d.	FOREIGN STEEL.	Per Ton.
Copper wire	p. lb. 0 1 3½	Swedish, in kgs.	21 15 0-22 15 0
ditto tubes	" 0 1 4-1 4½	" to arrive	21 10 0-21 15 0
Sheathing and bolts	" 0 1 1½	Ditto, in faggots	23 0 0-
Bottoms	" 0 1 2-1 2½	English, Spring	18 0 0-23 0 0
Old (Exchange)	" 0 1 0-	QUICKSILVER	p. lb. 0 2 0-
Best selected	p. ton 134 10 0-nom.	Foreign	23 5 0-29 10 0
Fouling cake	" 121 10 0-	To arrive	23 10 0-29 15 0
File	" 121 10 0-		
American	" 120		
IRON.	per Ton.		
Bar, Welsh, in London	8 10 0	IRON	
Ditto, to arrive	8 0 0-	in sheets	36 0 0-36 10 0
Rods	7 16 5-9 0 0	TIN	
Bar, Stafford, in London	9 5 0-10 0	English, blocks	135 0 0-
Ditto, ditto	9 12 6-10 10 0	Ditto, Bars (in barrels)	135 0 0-
Hoops	10 7 6-11 0 0	Ditto, Reduced	138 0 0-
Sheets, single	11 0 9-11 10 0	Bands	134 0 0-135 0 0
Pig, No. 1, in Wales	4 10 0-5 0 0	Strata	132 0 0-133 0 0
Refined metal, ditto	5 0 0-5 15 0		
Ditto, railway, ditto	7 0 0-7 5 0		
Hilt, Swed, in London	14 10 0-16 10 0	TIN-PLATES.	
in stock to arrive	15 0 0-16 0 0	IC Charcoal, Istqua, p. ox. 1	19 0-2 1 0
Pig, No. 1, in Clyde	3 3 6-3 5 0	IX Dito 1st quality	2 3 0-2 8 0
Ditto, in Tyne and Tees	3 11 0-3 15 0	IX Dito 2d quality	1 17 0-1 18 0
Ditto, forge	3 10 0-3 15 0	IX Dito 3d quality	2 3 0-2 4 0
Staffordshire Forge Pig	4 15 0-5 0 0	IX Coke	1 13 0-1 13 8
Welsh Forge Pig	3 12 0-4 0 0	IX Dito	1 19 0-1 19 5
LEAD.		Canada plates	p. ton 16 0 0-16 10 0
English Pig	23 10 0-24 10 0	In London	26s. less at the works.
Ditto sheet	24 15 0-	Yellow Metal Sheathing	p. lb. 11 3/4 d-
Ditto red lead	26 0 0-26 5 0	Wethered's Pat. Met.	p. ewt. 2 2 0
Ditto white	27 0 0-28 10 0	Stirling's Non-laminated	
Ditto patent shot	27 0 0-	Surfacing, or Hardened	9 0 0-9 2 0
American	28 10 0-23 15 0	Tin	
Bars (sheets) p. lb. 11 4d.-12 1/2d.		Surface Rails, p. ton	
Wire	11 3/4 d.-12 1/2d.	Stirling's Patent	Glasg. — 5 3 0
Tubes	13 3/4 d.-14 1/2d.	Ditto	Wales 4 0 0-5 5 0
		Indian Charcoal Pigs	— 7 10 0
		In London	

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—Our market continues to wear a gloomy appearance, and the prices of some metals have further declined. Exports have materially fallen off, both to India and America, which markets, forming the principal outlet for metals, and being now almost entirely closed on account of the unsettled state of things prevailing in those parts, will doubtless be the means of seriously affecting the value of metals, unless advices shortly are of a more satisfactory character. The demand for home consumption is tolerably good, otherwise orders would be extremely scarce.

COPPER.—No change has taken place in the fixed price of this article, and the market, although very quiet, especially for shipments, wears a steady appearance. It is not improbable there may be an improvement in the demand for rolling and melting qualities.

IRON.—The ironmasters are much in want of orders for rails, and for a good section buyers would have the advantage of price in their favour. English bars are in but limited request, and although merchants have a few orders in hand, their opinion of the market prevents their putting them in execution at present. Staffordshire in moderate demand; prices remain as quoted in last week's Journal. Swedish bars, of Indian specification, are procurable at 14l. 10s. to 14l. 15s., each ship, in London. Scotch pigs have slightly fluctuated in price, the market being anything but strong; sellers and buyers alternately at 60s. to 61s. m.m., g.m.b., at which the market closes—rather sellers.

LEAD.—Prices remain quoted as before; the demand limited.

SPETERL.—A fall of about 15s. per ton has taken place; orders are very scarce, and stocks are gradually increasing.

TIN.—In English there has been a reduction of 5d. per ton in blocks and bars, and 6d. per ton on refined; enquiries have not much improved since the alteration. Foreign has also receded; a little business has been done in Banca at 134l.; Straits quoted nominally 132l. per ton.

TIN PLATES.—Coke and charcoal are about 1s. per box under former prices.

LIVERPOOL, OCT. 22.—There is nothing of importance to report in our metal market, the tone being quiet and easy. The high rate for money now ruling has the effect of considerably circumscribing operations, and consequently prices show a downward tendency. Quotations must be considered nominal, as the rates at which orders would be accepted depend materially upon the quantity and quality of the specifications offered. In Scotch Pig-iron some slight improvement has taken place, buyers for open time being rather more plentiful. The shipments continue to be on a large scale—say, 10,148 tons, against 10,704 tons for the corresponding week of last year. A reduction in the price of English Tin was announced yesterday, to the extent of 5d. per ton on common bars and blocks, and 6d. per ton on refined blocks; this fall was not unexpected, seeing that foreign tin has receded so much. Tin-plates have followed the reduction in the value of tin, and sellers are eager to dispose of their stocks. The demand for Copper is quiet, and the terms accepted by sellers are rather in favour of buyers. Lead shows no alteration. The following are the quotations:—Iron: Merchant bar, 7l. 10s. to 7l. 15s. per ton. —Tin: Common block, 135d. per ton; common bar, 136d.; refined block, 138d. —Tin-plates: Charcoal, IC, 36s. 6d. to 38s. per box; coke, IC, 31s. 6d. to 33s. —Lead: English sheet, 25d. per ton; English pig, 24d.—Copper: Cake and tile, 121l. 10s. per ton; best selected, 124l. 10s.; sheathing and bolt, 1s. 1d. per lb.—Yellow metal sheathing, 11 3/4 d. per lb.

MINES.—The mining market this week, notwithstanding the increased rate of discount to 8 per cent., and the consequent tightness of money, has been characterised by increased activity rather than otherwise, the principal demand still being for some of the progressive mines we referred to last week. Dividend miners are not so much sought after, speculators appearing rather to prefer such shares as promise a speedy rise of 40 to 50 per cent. to those paying steady dividends of 15 or 20, and this state of things may have been brought about by the sudden and great rise in East Basset. In Wheal Uny there has been a steady demand, and the price has daily advanced 10s. to 12s. per share, until they leave off at 7 to 7 1/2; this is a rise of 4d. per share in three weeks; this mine has further improved since our last. West Frances, 16 to 17; South Frances, 24 to 25; Basset, 19, and more in demand; Devon Great Consols, 440 to 450; West Basset, 24 to 26, and the mine improved; North Basset, 15 1/2 to 16, and more demand for them; the lode in the 80 is looking better. West Seton, 350. Grambler and St. Aubyn, 80 to 85; the prospects of the mine in the 36 are more encouraging. North Frances, 14 to 15, and more doing. East Buller shares, which have been a dead letter for many months, suddenly became in demand at 27 per share, and leave off at 2 to 2 1/2; at the meeting, a new manager was appointed, a call of 20s. per share made, and a suitable engine to be erected forthwith. We are glad to see this, for whether it has rested with the shareholders or the management, the apathy hitherto shown towards this, one of the best sets in the district, has been most reprehensible; the mine, as most of our readers are aware, is immediately adjoining Buller, Copper Hill, and Basset. Alfred Consols have been more in request, at 13 1/2 to 14 1/2, leaving off at 14 to 14 1/2; the mine has improved in the 110. Great Alfred shares are very flat, at 5 to 5 1/2; the 180 is said to be looking better, and promising improvement. Cradock Moor, 49; the next dividend will be a trifle better than the last. Gonamens, 10; West Cadron, 120, but without business doing; South Cadron, 345 to 350; Wheal Mary Ann, 47 1/2 to 48 1/2; buyers; Trelawny, 25, sellers; Trewetha, 1 1/2 to 1 1/2, sellers; Herodsfoot have been more in request the last day or two, at 7 1/2 to 8; Wheal Wrey, 5 to 6; Ludcott, 12

At Fowey Consols Mine meeting, on October 13, the accounts for May, July, and August showed—By sale of copper ores, 13,904. 7s. 1d.; mandrels, 5s. 1d.; materials and sundries, 783. 6s. 7d. = 13,986. 2s. 7d.—Mine cost, 1532. 14s. 5d.; stores, 2051. 10s. 1d.; sinking profit, 3011. 17s. 6d.; odd balance per audit, 5702. 11s. 1d., leaves now in hand, 6007. 9s. 2d., which it was resolved to apply to the carrying out some important new work, with additional repairs of machinery, as recommended by Capt. Fawcett. With respect to the new work proposed and agreed to at the last meeting, the report says—“Under present circumstances we are immediately proceeding with the work, the full of the standard being the great cause—for in a mine like this, where there are so many high price pitches to make the returns meet the expenditure. It is our intention, however, to wait to make the returns meet the expenditure. It is our intention, however, to wait to see how the work goes, if circumstances will admit of it. The standard for a few weeks has rallied, and somewhat assisted us, but at present is going back again; therefore, great care need again be exercised.”

At North Wheal Croft meeting, on Oct. 20, the accounts showed—Balance last audit, 6167. 6s. 6d.; mine cost, July, 439. 19s. 6d.; August, 354. 11s. 5d.; odd balances, 232. 9s. 1d.; merchants' bills, 474. 5s. 6d.=2165. 10s. 4d.; bill 18s. 9d.; calls received, 618. 12s.; leaving balance against mine, 741. 19s. 4d. Capt. Joseph Vivian reported that the 43, on Fane's lode, had much improved in appearance, and was in whole to surface, the end being now about 200 fms. from eastern boundary. They had recently met with this lode in the 110, close to their western boundary, where it looked well, and is above 600 fms. from eastern extremity of soft, in ground looked favourable from the 100 to the 130, and if they judged from mines south of them, where large quantities of tin had been met with under rich veins of copper ore, they have reason to expect the same results there.

At South Wheal Seton meeting, on Tuesday, the accounts showed—Tut-
tak and wages, July, 2974. 12s. 6d.; Aug., 1114. 5s.; merchants' bills, 1611. 5s. 2d. = 7s. 2s. 5d.—Balance last June, 237. 17s. 14d.; call of 14, share per fm., leaving balance, 1524. 5s. 7d.; merchants' bills, 2106. 6s.; balance of new engine, 52. 1s.; leaving balance in favour of the mine, 1779. 15s. 8d. The profit on the two weeks' working was 284. 13s. 3d. Captain J. Davey reported upon the several points of operation in the mine.

At Great Wheal Falmouth meeting, on Monday, the accounts showed—Balance last audit, 492. 15s. 6s.; lead and gold sold, 1103. 9s. 4d. = 1506. 4s. 10d.; tin cost, June, July, and Aug., 6707. 15s. 4d.; merchants' bills, 206. 7s. 9d.; dues and lead, 607. 15s. 6d.; call of 14, per share, 4004.; leaving balance, 1524. 5s. 7d.; call received, 618. 12s.; leaving balance against mine, 741. 19s. 4d. The second, of 2564. (2s. 6d. per share) was declared, and 312. 3s. 4d. carried over to next account. Captain W. Burrows reported that Burrow's engine-shaft sank 10 fms. on the 20, ground fair for sinking, and in 10 days from date all would be complete to the 30. They expect that the east lode will be seen in cutting point, and from its appearance in the 30 they anticipate good results.

At East Providence Mine meeting, on Monday (Mr. Nicholas Harvey in the chair), the accounts showed a balance in favour of adventurers of 174. 17s. 10d. of 1s. per share was made. A resolution was passed, instructing the Chairman, Rosario, and Mr. Holloway to purchase a suitable engine, and erect it on the mine, proceedings, which are detailed in another column, terminated with a vote of thanks to the Chairman.

At South Cudliffe Mining Company meeting, on Thursday (Mr. W. A. in the chair), the accounts showed—Balance in favour of the adventurers, 18s. 1d., and in the estimated statement of assets and liabilities the balance against mine was 603. 17s. 1d. A call of 2s. 6d. per share was made. The proceedings, which are reported in another column, terminated with a vote of thanks to the Chairman, committee, auditor, and secretary.

At Holmshill Mining Company meeting, on Wednesday (Mr. Pilcher in the chair), the accounts showed balance against adventurers 1174. 6s. 5d. It was in future to hold the meeting every three months. The proceedings, which are reported in another column, terminated with a vote of thanks to the Chairman.

At Devon-Burns Burnside meeting, on Thursday, the accounts showed a balance against the mine of 934. 12s. 3d. The castings for, and labour in fixing, plumb and increased the last and present month's cost, but future costs would be diminished in consequence. A call of 1s. per share was made.

At Great Wheal Alfred meeting, held on Thursday (Mr. T. Field in the chair), the accounts showed a balance against the mine of 659. 11s. 9d., to meet which 1s. per share was made. The opinion entertained was, that at the next meeting the balance would be on the other side. The report and proceedings will be found in another column.

At Wheal Grenville meeting, yesterday, in the estimated accounts of titles and assets the balance against the mine was 512. 3s. 5d., which included forthcoming cost, amounting to 2004. A call of 2s. 6d. per share was made.

At West Sharp Tor Mine meeting, on Wednesday (Mr. C. Chatfield in the chair), the accounts for May, June, July, Aug., and Sept., were submitted, showing a balance of 49. 19s. 2d. in favour of the adventurers; and there were arrears of calls amounting to 137. Captain W. Richards reported that he had recently informed that the lode in the bottom level at Phoenix, which was more than 100 fms. on the line of the lode below the surface, was worth 1300. per fm., and as bottom level which was only about 95 fms. perpendicular from surface, contained no copper and grey ore, with other appearances similar to the Phoenix lode on back of their course of ore, he thought it but reasonable to believe that similar kinds of ore would be found there by-and-by; but in order to obtain these desirable results, it was absolutely necessary to exercise perseverance, and give it a trial.

At Wheal Agar meeting, on Wednesday (Mr. Clinton in the chair), the accounts showed—Labour cost, June, July, Aug., and Sept., 1697. 5s. 8d.; merchants' bills, 324. 2s. 2d.; tributes, 79. 2s. 10d.; sundries, 71. 4s. 4d. = 1530. 6s. 9d.—Balance last audit, 327. 3s. 4d.; copper ore sold, 275. 9s. 6d.; calls received, 611. 5s. 5d. A call of 1s. per share was made. Capt. W. Roberts and D. Lansbury reported that engine-shaft was down 10 fms. under the 60. Twelve men were employed here, 1s. per fm. The next sampling would be on the 23rd inst., of about 30 tons of ore.

At Camborne Sean and Wheal Francis meeting, Oct. 13, the accounts showed—Tut-work, Jan. and Aug., 1934. 5s. 6d.; merchants' bills, 1510. 6s. 10d.—Balance last audit, 327. 3s. 4d.; copper ore sold, 275. 9s. 6d.; calls received, 611. 5s. 5d. A call of 1s. per share was made. Capt. W. Pryor, R. Pryor, and E. Rogers reported that the main object for the future will be to explore the bottom part of the mine and the other lodes; and having gone through the dead ground, which in this neighbourhood rarely occasioned by the change of the killas to the granite, they will be in a position to increase the returns for tin. They had on the mine, and in slimes at the mine, about 4 tons of tin.

At Wheal Union meeting, on Wednesday (Mr. J. Thomas in the chair), the accounts showed—2205. 15s. 2d.; tin, &c., scd, 49. 0s. 6d.=2244. 15s. 6d.—Balance last audit, 493. 11s. 9d.; mine cost, July, 327. 18s. 3d.; August, 352. 9s. 8d.; sundries, 71. 4s. 4d.; leaving balance against mine, 1071. 9s. 6d. A call of 10s. per share was made. Capt. T. Gianville's report was read and approved.

At East Carn Brea meeting, on Wednesday (Mr. P. E. Blakeway in the chair), the accounts showed—Balance last audit, 697. 15s. 2d.; calls received, 150. 1s. 5d.—Labour cost, July, 121. 2s. 8s.; August, 124. 15s. 9d.; sundries, 10s.; leaving balance in favour of mine, 595. 6s. 4d. A call of 5s. per share was made.

Capt. G. Ivanhoe reported, that looking at the numerous lodes in the setting, original strata they are embedded in, they cannot fail of having a good mine.

At Sortridge Consols Mining Company have issued the accounts to be submitted to the meeting on Tuesday, by which it appears the mine cost and merchandise bills for July was 473. 19s. 4d.; August, 526. 8s. 6d.; tin cost, 87. 5s. 6d.; sundries, 71. 4s. 4d.; leaving balance against the adventurers, 1071. 9s. 6d. A call of 10s. per share was made.

The Worthing Mining Company have advised from Adelaide to Aug. 8: The acting manager reported that he had visited the Bremer Mine, and found that Wotton's engine-shaft a decided change had taken place, the bottom now being in clay slate, strongly stained with copper, and some headshowing copper pyrites. The engine was working well, keeping the water in fork at nine strokes per minute, but when any hindrance took place the water rose rapidly. On examining the old workings, the water had gone down about two feet during the week. At Boundy's shaft the water had been taken out, the bottom cleared up, and about two barrows of stuff broken, showing very fine ore; the lode was seen as 6 ft. wide. The shaft would now be sunk by six men, to open ground for tributaries. Captain J. Remfry also reported that owing to the heavy rains the water in the old workings had sunk very slowly; the ground in the shaft was much improved, the heads or joints of clay showed copper pyrites, black oxide, and malleable copper; this being a distance of 5 fms. from the lode, clearly showed the strength of the same. In the slopes in the bottom of the 5 fm. level some very rich grey ore, mixed with red oxide and malleable copper, had been raised. In the old workings, at the same depth, a good course of black ore, 2 ft. wide, was to be seen. The lode in Boundy's shaft appeared to underlie west towards the main lode, which underlies east. In back of the 5 fm. level, north of old shaft, a pitch had been set at 10s. in 12; although the lode was principally worked, yet the men would no doubt be well. Specimens of the various kinds of ores raised would be sent by the earliest wool ship.

From the Wildberg Mines, Captain Z. Walls, (Oct. 17) reports:—The fixing of the pumpwork in the Era Kommer is completed, and sinking will be commenced forthwith. The balance-hob, flat-rods, &c., for Michael's shaft, are also preparing as fast as possible, and I think the sinking may be again resumed in about four weeks. We have dressed and sampled 50 tons of silver-led ore for the first half of the month. The different works throughout the mine are progressing satisfactorily.

The Port Phillip and Colonial Gold Mining Company have advised from Melbourne to Aug. 12:—Considerable improvement had taken place in the business of quartz crushing at Clunes. The stamps and the Chilian mill were working more efficiently than they had hitherto done, and the yield of the quartz was increasing.

The machinery in operation was a stamping mill of 20 heads, and one Chilian mill. Mr. Bland was proceeding with the erection of an additional stamping mill of 12 heads, and another Chilian mill, seeing every encouragement to do so in the progress hitherto made. The details of the proceedings since the last mail are coming by the Australian overland mail.

At Alfred Consols, we are informed that the operations are progressing satisfactorily. The north lode in the 130, east of Davey's engine-shaft, is worth 10s. per fm. The main lode, No. 2 winze, is worth 60s. per fm. The various erections are progressing favourably; when the ore discovered in the adit can be taken away to an advantage, the shaft will soon be completed to the adit, and the cross-cut communication established so that eight highly mineralised lodes will pass through the shaft in sinking.

Trotol, the new copper lode is producing some fine work, and giving signs of improvement. The tin department is producing satisfactorily. A large quantity of very rich iron ore is also being raised. Immediate steps will be taken to mine thoroughly, by erecting the necessary machinery, draining the oil, and extending cross-outs to intersect the south lodes.

Great Hewas United Miners are opening out in the most satisfactory manner. The Eastern Mine is being rapidly developed. The new shaft is holed to the main lode in this end in still rock, and has been for upwards of 40 fms. The 50 ft. level; in this mine also large reserves are being opened out, and there is no doubt but that the returns will be much increased in a short time. Some fine copper has been discovered recently, producing over 60 per cent.

Finsford, the new copper lode is producing some fine work, and giving signs of improvement. The tin department is producing satisfactorily. The north lode in the 130, east of Davey's engine-shaft, is worth 10s. per fm. The main lode, No. 2 winze, is worth 60s. per fm. The various erections are progressing favourably; when the ore discovered in the adit can be taken away to an advantage, the shaft will soon be completed to the adit, and the cross-cut communication established so that eight highly mineralised lodes will pass through the shaft in sinking.

At Alford Mills Company meeting, yesterday (Mr. P. Anstruther in the chair), the accounts showed—Profit for 12 months, ending June 30, 1857, 150. 2s. 1d.; at the rate of 10 per cent. per annum was declared, which, after payment of 3000., to be carried to the reserve fund, and 995. 15s. 2d. to the next account. New advice from Ceylon, the affairs of the company in that island were presented satisfactorily. The sum of 500s. per annum, from June 30, 1856, was voted to Mr. J. E. Coleman and Mr. C. Nicholson were re-elected auditors, and 251, agreed to be paid them at each audit. The proceedings terminated with a vote of thanks to the Chairman.

The Alton Mining Association have their report from Sept. 5 to Oct. 2:

Raipear.—The stopes above the shallow adit and the winze from the surface, towards the same ore deposit, continue as productive and encouraging as before, though the workings being to a great extent exhausted do not tell on the produce of the present month. In the 10 stope the lode is 4 ft. wide, and yields a considerable quantity of ore, though, as usual, it is mixed with slate and limestone. The stopes under the 20, on the same shoot of ore, is materially improved, and we are there again raising ore of a tolerably high percentage. The mine being now again free from water down to the 30, we anticipate resuming operations there next week.

Old Mine.—In No. 1 working the lodes yield from 4 to 6 tons of ore per fm., and the prospects continue highly encouraging. The lode, although as yet rather intersected, continues in No. 2 winze, and is now about 2 feet wide, yielding stones of ore. The hardness of the ground prevents us from making that progress desirable; but we are using every exertion, and hope soon to intersect the promising run of ore ground coming in this direction from No. 1 sink. In the winze under the shallow level the lode is somewhat larger, and produces more mineral, otherwise there is no change. We have commenced stopping down a piece of ground in Bergeneater's old east stop, which is necessary before we can begin the sink proposed to go down in the slide to open out the lode under the tramroad level, in this part of the mine. By doing this (stopping), we shall lay open and prove if the great brook of a lode above the slide in this place is a part of the old one, or whether it is another; it yields nearly ore enough to pay for working.

United Miners.—The prospects in the 40, on Woodfall's lode, are encouraging, and the pitched being got into tolerable working order again, leads us to expect more remunerative results than last.

Michael's.—The ground in the levels toward the north lode and lobby workings continues rather hard; but, as they are approaching very near the objects for which they were commenced, we may soon expect a change.

Thomas's.—The returns from this place for the last quarter have fully answered our expectations, and the lode still looks promising, yielding in one place from 2 to 2½ tons of ore per fm. The setting in of winter will prevent operations being carried on as at present—open cutting from surface. We are, therefore, making preparations to sink it when no longer able to adopt the present mode.

Melville.—Shortly after our last the weather set in cold, with heavy falls of snow, compelling us to suspend all operations. We succeeded in collecting and weighing all the small piles of ore, together amounting to about 28 tons. Although so many places have been opened on these lodes, nothing sufficiently encouraging has been met with to warrant the commencement of extensive tutwork operations, they must, therefore, remain to be further explored on tribute.—CHAS. TRELEAKE.

The Mariquita and New Granada Company received advices on Monday:—SANTA ANA MINE: Estimated returns, \$17,963; cost not yet received.—MAMATICO for July: Cost, \$10,355; returns, \$8659. The superintendent writes, under date Aug. 23:—“The dry weather has operated against the returns for July, as will be seen by reference to the stamp summary, the mills having worked slowly.”—No RIMA:—No account received.

The United Mexican Mining Association have advices from Guanajuato to Sept. 14:—At Jesus Maria y Jose, the amount of extraction during the three weeks had been 3450 cargas—a somewhat less average, attributable to circumstances unconnected with the capabilities of the mine. The repairs and timbering of the shaft having been completed, the re-sinking had been commenced on the 10th. Notwithstanding a holiday, 550 cargas had been obtained the prior week. The works in which ore is in course of extraction are Dolores (to the south), and the frontes of San Pedro and San Pablo—the former having a width of ore 7½ varsas, and the latter 4 varsas. In the level below these are the frontes (or extremes) of the lodes called the 1 varas. In the 1 varas wide in the 30, the width of Dolores gives a width of ore in the shaft (or dip of the vein) 3 varsas, by 7 varsas in the length or direction of the same. In the upper and northern section of the mine, the works having deteriorated were limited to the inclined pozo, which is to communicate with the lower workings at San Pedro, and which inclined pozo has ore 1½ varsas wide, and a new fronte of 1 varas wide in ore (the vara measuring 33 in.) On the 5th, 1623 cargas were sold, and produced 55739, and on the 17th another sale would take place (the cargo being 350 lbs). The haciendas of Dolores and Duran were fully employed on ore from the mine of Jesus Maria, and with good results. Quicksilver was quoted at \$85, cash per quintal of 100 lbs., and \$85 credit. An offer availing of 40 quintals at a lower figure, a purchase was made, there being a consumption on hand for eight or nine months for reducing the ore.

The Copiapo Mining Company's estimated produce for Aug.:—

	Total	6600	\$10,990.62
Aug. 30.—In the 20, driving east, on the north lode, the lode is 2½ feet wide, producing a little saving work. In the chilton, or winze, or the 20 we still continue to drive the cross-cut north, in the bottom of this winze, to intersect the north part of the lode, the lode is a little improved, and will now yield from 3 to 4 tons of ore per fm.			
The cross-cut driving north in the 30 is progressing favourably. The 30 driving east, on the north lode, the lode is 20 in. wide, and producing a little ore. In the 40 driving east, on the north lode, the lode is 4 feet wide, and still continues to yield 1 ton of fair quality ore per fm. In the cross-cut north in the 40 the ground is hard for driving. In the 40 driving west on the south branch, the branch is a little improved, and will now yield 2½ tons of ore per fm. ore per fm. In the chilton, or winze, sinking below the 40, the lode is 2½ feet wide, but unproductive. In the slopes in back of the 40, on the south branch, the branch is 20 in. wide, producing from 2 to 3½ tons of ore per fm. ore per fm. In the 50, driving east on the middle lode, the lode is 3½ feet wide, but poor. In the 60, driving west of Harman's shaft, the lode is 20 in. wide, and still continues to yield 1 ton of fair quality ore per fm. In the 80, driving west of Harman's shaft, the lode is 20 in. wide, but poor, and the ground very hard for driving. In the slopes in the old part, on the green lode, the lode has improved, being now 3½ feet wide, producing from 5 to 6 tons of ore per fm. ore per fm. The next sampling would be on the 23rd inst., of about 30 tons of ore.			
Total	6600	\$10,990.62	

The New Grand Duchy of Baden Mines have advices from Munsterthal, near Freiberg, to Oct. 19:—At the Schindler Mine, the new water-wheel is set to work, and with the rods, bobs, &c., connected thereto, answers quite satisfactorily. We first set to with one lift in the old shaft, fixed in the cistern 15 fms. below adit, as referred to in last report. Since then we have drawn away the remainder of the old pitwork (for which we before had in use), and have dropped another suitable lift 5 fms. below the cistern, forked 8 ft. with it, and still doing well; although the surface water is not much increased, we have sufficient to drain the shaft at a good rate with this new wheel. The piece of ground left in the eastern side of the shaft against the old workings will, I expect, be completed this week. We have been for some days engaged in fixing founders to carry the water from the stream at the foot of the Bechen, so as to prevent the frost and snow from damming the water back, which was the cause last winter of a good deal of trouble and expense. This job is in a forward state, and will require only a few days' work more to complete it. We have also been obliged to remove the launders conducting the dressing water to the Wilhelm's floors to a lower level under the new wheel; this is already finished. The work for the new dressing machine is not being got on with quite so fast as I could wish, for want of more suitable workmen. The masonry of the wheel-pit will, however, be ready quite in time, and the patterns for the castings will not require much longer, two of which are finished, and will be sent to the foundry to-morrow. At the Tenegrogrund Mine, the lode at Louisen level is producing 5 to 6 cwt. of ore per fm., and the lode at Frederick's level is worth

THE PROGRESS OF MINING IN 1856.
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By THOMAS TAPPING, Esq., Barrister-at-Law.

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Notices to Correspondents.

•• Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

MANUFACTURE OF CAST-STEEL.—In your last Journal a correspondent complains that Mr. Robert Mushet's invention for manufacturing cast-steel from pig-iron has received less attention from the scientific press than the processes of Bessemer, Uebelius, and others; but surely this cannot be attributed to any want of courtesy towards Mr. Mushet, since his name alone would have caused his propositions to have been read with interest; while in the case of Bessemer, Uebelius, &c., it was the process only which would attract attention—the inventors being unknown to the iron trade in the capacity of ironmakers; the fact of the former being, to use a German's designation, a "patent-monger," and the latter a highly favoured military officer under a despot, could not be adduced as evidence of their practical knowledge of the peculiarities of iron manufacture; so that whatever publicity they may have obtained could only be considered as the result of criticism provoked by the inventors themselves. But what is the position of Mr. Mushet's case—the fact of its being his invention would immediately have excited the curiosity of all, and no doubt many would have used their utmost endeavours to prove that the invention was not new, even before experiments had been made, in the anticipation that, by proving it public property, they themselves would share in the profits which might result from employing the process; yet "Sideros" would accuse the press and the iron trade of injustice in not raising a controversy upon the merits of Mr. Mushet's invention. I trust you will now give the process the benefit of publicity by inserting a description of it in your journal; but I must remark that Mr. Mushet's position is very similar to that of the waggoner who called upon Hercules for assistance, and would not take the trouble to help himself.—EISENSTEIN, Oct. 19.

LONDON AND VIRGINIA GOLD AND COPPER MINING COMPANY.—Our Notice of last week, with reference to this company, was not exactly correct. The ordinary (adjourned) general meeting will take place on Tuesday, immediately after which there will be an extraordinary general meeting, for the purpose of decreasing the capital of the company. The meeting on the 29th is to ascertain to registration with limited liability.

TEMPERING WITH SAFETY-LAMPS.—In your last Journal, you reported that 12 men were indicted for opening their safety-lamps, and thus endangering the lives of all in the mines. Now, as the proprietors appear to be desirous of doing all in their power to prevent accidents, would it not be wise on their part to adopt one of the inventions which have been described in your Journal, and which effectively prevents the lamp being opened until after the light has been extinguished. There is Dubrule's lamp, of which you gave an illustration but a few months since, would have entirely obviated the necessity for bringing men before the magistrates and fining them; and Mozdorff's is not less valuable. As each of the men were fined, with costs, 9s. 6d., with the threat of a larger fine in all similar cases, surely those who are in a position to protect the miners might save the possibility of men being called upon for a large portion of their weekly earnings for a slight act of negligence. I do not say this from any wish to induce carelessness amongst the miners; but as hermetically closed lamps (if I may use the term) could be employed without extra cost to the burner, and with greater convenience to the miner, I certainly cannot see any objection to their adoption.—C. E.: Oct. 20.

THE MARQUITA AND NEW GRANADA COMPANY.—"J.J." (Bridport).—At Santa Ana Mines, the returns for June were \$23,675; and by the accounts received on Monday, the returns for July were estimated at \$17,963.

CLarendon CONSOLIDATED MINING COMPANY OF JAMAICA.—"H." (Southampton).—The call of 2s. 6d., made in July last, is payable Oct. 31. The reason assigned by the chairman of the meeting for giving such ample time was in consequence of a large number of shares being held in Jamaica. We are informed that a meeting has been held in the island, when the shareholders unanimously agreed to meet every call made to the extent of the additional capital required, and which will enable operations to be vigorously carried on for four years: by that time there is no doubt the mine will be fully proved.

LIBERTY MINING COMPANY OF VIRGINIA.—"An Original Holder" (Highgate).—The applications for the shares to form the additional capital have been so few, that it is expected the company must be wound-up.

CHANCELLORVILLE REDUCTION-WORKS.—The attention of the shareholders has for some period been drawn to the days which have occurred at this establishment. The quartz, it is said, has been there since Nov., 1855—at least, Mr. W. S. Trotter published such was the fact. At the commencement of last month we were told that the machinery was ready, and would be in operation at the termination of September: 7 tons have been crushed. The power, we are told, is sufficient for just ten times that quantity, and yet no signs are made. Proprietors are in general, it is stated, very impatient parties. I think, however, the holders of this company cannot be accused of this fault, as they have displayed a greater amount of forbearance than could have been expected. The mode of procedure and fruitless expeditions have even excited the attention of a practical man, who generally takes a lenient view of any *foibles* which may arise from unforeseen difficulties, or other reasonable causes. I allude to Mr. Evan Hopkins; he is at Chester, in the neighbourhood. The expense of a report from him, under the circumstances, would not be any great cost, and I am sure would be satisfactory to the shareholders; we should then know the truth. Why has not this been done?—*Inquirer*: Oct. 22.

JOINT-STOCK COMPANIES ACT, 1856 AND 1857.—I saw by your last Journal that all companies not registered under these statutes were illegal. I have gone through the Act, and can find no such result. I find that companies registered have certain privileges, and those not registered remain with certain disadvantages; but when it is said the latter are illegal, what is the penalty, and how, if illegal, can they be put a stop to? I am a shareholder in several mining companies on the Cost-book System, and the secretary tells me that their lawyer says they are not bound to register, and may continue to work, if the shareholders choose to be liable for the debts, but that they are not illegal. Which is right, you or the lawyer?—A. P.

QUARRY REDUCTION COMPANY.—The meeting of the association will be held early in the ensuing month. As yet, the new company has paid its own working expenses, and had there not been a deficiency in the supply of water a small return would have been made. Mr. W. Vian, the secretary, will answer any communications that may be addressed to him, and will forward all information to any bona fide shareholder who may deem it necessary to apply to him.

TICKETING AND SAMPLING EXPENSES.—I have often witnessed the sampling and ticketing of copper ore sold at Swannes, and, if I mistake not, it is not at all usual to have a sumptuous "spread" on those days, although they are conducted fortnightly; nor is there any other unnecessary expense attached to the mines which have ores for sale than merely a few shillings, probably, for the use of the room in which the sale is carried on, by the purchasers.

It would not be more economical if the same Cornish copper companies and other agents would adopt this method every week, instead of putting the mines and adventurers who are fortunate enough to have ores for sale to the expense of something like £3000. a year, which absorbed twenty men in the shape of a *deaner* by the copper companies, and other agents, besides being allowed so much weekly for expenses in attending the sale of copper ores, which no doubt goes into their pocket as clear profit to themselves. Why is it that our sales at the ticketings weekly cannot be conducted in a somewhat similar manner to the Swannes ticketings? We are not supposed to get a better price for our produce by being put to this useless and unnecessary expense, which, to some of the mines (Devon Great Consols, for instance), is no small amount in the course of the year.—*An Adventurer*: Oct. 22.

LONDON AND MANCHESTER DIRECT RAILWAY.—"Inquirer" (Leeds) should apply to Messrs. Ashurst, Son, and Morris, Old Jewry, London, who will communicate all particulars.

"**Subscribers.**"—We cannot insert anonymous letters when the writers do not even entrust us with their names. In this case, he says that he withdraws his name "for certain reasons," which scarcely looks disinterested, and we must add that it is evident his object and intentions are not good. If "Subscriber" is connected with mining in the neighbourhood of the mine he alludes to, as he says he is, he could not have referred to those who could have given him an impartial explanation of the circumstances; and if his object had been *bona fide*, he would not then have made a garbled and partial statement, which could have no effect but that of gratifying some personal feeling. We have taken the trouble to make inquiries in a reliable quarter, and we find, from the best information, that 30 tons out of the 40 tons were ready some time ago, and are in the storehouse at the port. "Subscriber" may further be informed that the 40 tons were not made up, not on account of the want of ore, but, on the contrary, the floors are full, and there are 15 tons broken underground—therein, in fact, plenty of ore; but our "Subscriber," who says he is connected with mining in the neighbourhood, must be aware that the dry weather greatly retarded the dressing and other operations in the district, and at the mine he alludes to for 10 days the era-heat could not, in consequence, be worked, and for a longer period only at half-speed, while the drawing was similarly impeded. Another unexpected hindrance was, that the dresser left, and it was weeks before an efficient man could be got to supply his place; so that a combination of unlooked-for causes occurred to retard the dressing of the ore. "Subscriber" makes a misstatement as to the paragraph which appeared in the Journal. The dividend mine there alluded to as adjoining the set is given as the best known, without any inference that there were no other adjacent, although we believe that at two of those mentioned by "Subscriber," very little is doing. "Subscriber" evidently wishes to depreciate the mine, which we believe is progressing very well, and in doing so he has laid himself open to the charge of the suppressive *verbi* of *suppressive falsi*.

LIMITED LIABILITY.—"An unfortunate Director" should consult Tapping's "Explanation of the Joint-Stock Companies Acts;" see advertisement on p. 746.

STRATHLBYN MINING ASSOCIATION.—The letter from Mr. Charles Holland, in the Journal of Oct. 10, was inserted without meeting that attention usual with similar communications; otherwise, his allusions to the report of the previous week having been furnished by the secretary of the company, or his brother, would have been answered at the time. We may, however, now state that neither of those gentlemen had anything whatever to do with the account of the proceedings, either in correction or abridgement.

PONTORRIGD MINING COMPANY.—"J. H." (Bristol).—The annual general meeting will be held in Paris on Friday next.

It is stated that the prospects of the undertaking have considerably improved: according to the last report, from one part of the mine, called Rosier, the ore gave 52 per cent. for lead, and 43½ oz. silver per ton.

PRICE OF MINING SHARES.—"Observer" (of Bath) complains that the shares of certain mines are advertised to be purchased at a certain rate by some of the broking firms offering being much less than their value. An advertisement is no criterion of the worth of a share; these may be bought or sold for various motives. In general parties, previous to making a purchase or effecting a sale, inquire as to the proximate value of the property they wish to negotiate, and accordingly.

LIFT FOR ENGINE-PIT.—Your correspondent, "H. C. G.", wishes to know the arrangement of pumps for a shaft 130 yards deep. I have recently completed the pumps in two shafts of heavily watered mines of the above depth, and have on bucket lift 30 yards and two plunger lifts 50 yards each. The H-pieces, rams, &c., are on the Cornish plan, and work most satisfactorily.—A. B.: Oct. 22.

PHOTOGRAPHS FROM THE MANUFACTURING DISTRICTS.—In our next Journal, we shall commence a series of "Photographs of Eminent Manufactures," which, as comprising another phase of commercial industrial pursuits, to those so successfully portrayed by the artist now "luminizing" the customs and manners of Cornish Miners.

TOLVADDER MINE.—From my being a well-known adventurer, the remarks respecting this mine, under the head of Mining Notabilia, last week, have been supposed to come from me, and I, therefore, beg to state that such is not the case, and their appearance in the Journal is all I know of them. I cannot, forsooth, take the opportunity of saying that I disapprove of them, except so far as they contain accurate information about the mine, which I believe no one can be found to deny is a rare prize; and I think your correspondent should avow himself, not say whom he alludes to as conspirators and unprincipled persons, that his charge may not fall on innocent parties, and that those he accuses may have an opportunity of defending themselves. I intend at the next meeting to propose that photographs be regularly published in your Journal, as is not, I regret, at present the case.—W. P. PAUL: *Plymouth*, Oct. 22.

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other mining counties with equal justice; in the former county, this is evidenced by the absorption of the men thrown out of employment from the Consolidated Mines and East Wheal Rose, without any inconvenience or distress whatever. There always have been, and always must be, unfortunate speculations winding up, many from bad management and folly, whose advertisements occasionally appear, and cause fears to be entertained; those, though sadly interfering with, should not militate against, mining (which it is not, though assuming the name). We hear of one promising speculation, near Withiel, which has just been abandoned by a party, after squandering a considerable sum, not in developing or prosecuting the mine, but in squabbling amongst themselves, that is to be vigorously worked by a Cornish proprietary. There are numerous young mines progressing gradually but favourably. Too many persons are led, and lead themselves, to hope for immediate returns from mines. We beg such persons to discard these ideas, except they be already dividend mines in which they purchase; for even supposing the ore to be discovered, the preliminary processes for laying open the ground and preparing to raise the mineral and dress it for sale, in sufficient quantities to warrant a dividend, is and must necessarily be a work of time. They would do well to recollect a Cornishman's ideas of immediate returns from his own mine should be received relatively, as in comparison with other mines; that if it be not as our friends usually accept the term, in this sense the Cornishman may be correct; in the main, we believe they are correct.

The demand for metals is still good; mining stock generally stands the vicissitudes of the market as well as, or better, than any other similar securities,—we think there is every reason they should do so; they, of themselves, show no real symptoms of decay or decline, though we confess the smallness of the ticketing would warrant such a supposition. Let but an advance in the standard again take place, and it would soon be seen the produce in number of tons will resume its former position. The standard is now at a price of which no miner need or does complain; still, a few pounds per ton extra would not be objected to; the miner would, however, feel better satisfied if he were convinced he was getting the full value for his ore. This is more particularly to be remarked in the cases of blonde and muntic producers, who know their ores contain considerable quantities of copper and silver, for which no allowance is made them,—this will probably cure itself. We believe the quantity of blonde now produced, and which has been so much increased of late, is again falling off, which is to be regretted. The price is scarcely enough to be remunerative; its increasing scarcity may, perhaps, cause a better price for those who continue to produce, as zinc is largely in demand, and must be had. The prospects of mining, as a whole, we are assured, are highly gratifying,

The terrible risks to which miners are constantly exposed are too well known to require comment or illustration. The fact that they dwell, so to speak, in the Valley of the Shadow of Death, has rendered them reckless to a degree that is highly culpable, and the more so when it is remembered how important and precious are their lives to their wives and families; for miners constitute by no means the most provident class of our community, which does not rank high among nations for prudence and precaution. Without doubt this courage—for recklessness can arise from nothing but indomitable courage—which makes Englishmen the most venturesome people of the earth, is the great secret of our material success; it is the mainspring of our power; but however noble and praiseworthy may be the spirit that defies all danger, the sanctity of life, even of one's own, ought never to be forgotten. We should remember that life ought not to be heedlessly risked, for we owe an account of its careful stewardship to society, not to speak of Him by whom it was bestowed. Still less ought we to put our lives in jeopardy when there are others, bound to us by the most tender ties, who are unfitted to contend with the world, and entirely dependent upon our exertions for their daily bread and future welfare. It is the first duty of every man to make provision for his family, and upon no one of the labouring classes is this duty more incumbent than upon miners, for their lives, to use a technical phrase, are doubly hazardous; yet, according to the official returns, they would appear to be far behind the rest of the population in providing for themselves and families against accident. In an account of the number of societies enrolled or certified in England, Wales, and the Channel Islands, from June 21, 1793, to Dec. 31, 1856, just published in the Registrar's Report on Friendly Societies, we find that Northumberland, with a population of 301,134, and an annual value of real property of 1,103,477, has only 345 benefit or friendly societies; while Essex, with a population of 344,918, and real property of the annual value of 1,914,185, has double the number of benefit societies—673. In the case of Cornwall this difference is still more striking: the great mineral county of England, with a population of 340,974, and real property of the annual value of 1,131,983, has only 362 friendly societies; while a corresponding agricultural county, such as Suffolk, with a population of 331,465, and real property of the annual value of 1,556,870, has 715 friendly societies. The comparison might be continued further, and always with the same result; but it will probably be deemed that sufficient evidence has been brought forward to show that a mining population is less provident than an agricultural one.

If we go abroad and compare similar classes, we shall find the improvidence of our miners made still more painfully manifest. Take, for instance, Belgium, whose population, of all the inhabitants of the Continent, bears the strongest resemblance to our own, by the nature of the employment and the industry of the people. Their mining operations, especially coal workings, were formerly attended with as much danger and loss of life as here. In the ten years from 1835 to 1845 there occurred 1259 accidents in mines; 1175 miners were killed, and 860 seriously wounded, giving a total of casualties equal to 2035, or an average of more than 203 a year. This fearful rate of mortality led to the establishment of a more careful system of working; and it also led, which is more to our present purpose, to the introduction of the principle of making provision for the families of the victims, as well as for the unimpaired survivors of these catastrophes. Friendly societies, or provident funds, have been established in all the chief mines; at Liege, in 1839; at Namur, Mons, and Charleroi, in 1840; at the Central mines, and those of Luxembourg, in 1841. The object of these funds is to provide temporary and life pensions. Temporary pensions are made to the children of widows whose husbands have been killed in mines, to orphans whose last surviving parent perished in a mine, and in both cases until the children are 12 years of age. Pensions for life are granted to men rendered incapable of work by mining accidents, to the widows of miners killed during their work, and to the father, grandfather, mother, or grandmother, incapable of work, of any miner who may have been so killed. The funds are derived from five different sources—from deductions made out of the wages of the miners themselves, from voluntary contributions by the proprietors of the mines, from grants by the provincial authorities and the Government, from interest on capital, and from gifts, legacies, &c. The deductions from the wages of the men are compulsory, and range from $\frac{1}{2}$ to 1 per cent.; the contributions from mine owners generally equal the amount of deductions of their workpeople. In the Hainault and Luxembourg funds, 10 per cent. is set aside out of the annual receipts, to form a reserve in case of extraordinary accidents occurring.

The provincial and Government grants are generally awarded to make up any deficiency, and in order to induce the affiliation of the various funds, and to authorise supervision. Besides the district funds to which we have alluded, there are other provident funds attached to single mines. The first received, in 1850, 52637, in deductions from wages; 52637, from proprietors; 17547, from Government; 24267, from other sources—making a total of 14,706. Out of this amount, 11,649, were paid away in pensions and assistance; 4427, in instruction and moral amelioration, and 5797, was the cost of management: the total outgoings were thus, 12,670. The second class of provident funds which appear to be specially devoted to cases of sickness and accident, received, in deductions from wages, 12,0557; from mine owners, 24147, making a total of 14,5027; out of which the payments amounted to 13,9887. Grouping the two classes of funds together, and looking upon them as a whole, we find that, in 1850, the total receipts were 29,2237, the total expenses 26,6667, including 4427, for educating miners' children in the West Mons district. On Jan. 1, 1851, the reserved capital was 41,5837, and the liabilities 83587. The number of mines united in this manner was 305, in 1850, employing 47,319 workpeople, whose wages amounted to 864,9047. By the aid of these figures we are enabled to arrive at some curious results. Out of the total receipts we find that the deductions from wages amounted to 59 per cent., the contributions of mine owners to 27 per cent., those of Government to 6 per cent., and from other sources to 8 per cent. of the gross amount. Dividing the amount deducted from wages, and the aid given by owners, by the number of men employed, it will be seen that the annual payment by each workman was 7s. 8d., and the aid from

owners per workman 3s. 4d. The annual average of wages, in 1850, was 197, which would, therefore, make the relative proportion of payments by a miner 1 per cent. to each of his funds, as before stated, or 2 per cent. in all. The averages, again, give 18s. 4d. as the amount to which each miner is a participant. The total receipts of the district funds since their establishment up to 1850 have been 118,7947; the expenses 79,0577, during the same period, leaving a balance in hand of 41,5797. The amounts received and expended by the local funds—that is, those attached to each mine—cannot be exactly ascertained, but they have always exceeded those of district funds. With this knowledge we cannot err in estimating the total receipts from the two sources at 280,0007, and the total expenditure under both heads at 220,0007. Having recourse once more to averages for the five years ending 1850, it will be seen that the average receipts from the two funds were 28,4067 a year, and the expenditure 24,5817. "In this great movement of funds," says the registrar, "the six-tenths paid by the workmen have produced annually 17,0437"—a proof of the providence and sound ideas prevalent among the working class of Belgium, which redound highly to their credit. With so thrifty and careful a spirit among the lower classes, we can understand how, within a few years, Belgium has risen high among nations, and what has been the *magia* that has protected it alike from the fury of revolutionary tempests and from the ambition of powerful neighbours.

In our Journal of to-day will be found one of a series of papers we have lately published under the title of "Mine Photographs," containing a powerful appeal to our sympathies in favour of children employed in our metallic mines. Without endorsing all the views mentioned therein by Mr. George Henwood, whose experience entitles his opinions to considerable attention and respect, yet we think he does society good service in calling attention to the facts therein detailed.

We are aware children are sent underground at too early an age, and have frequently heard mine agents complain of it; but over this they have no control, seeing that the work is usually let by contract, the party so contracting being the person who employs the actual workers; they in their turn, as a matter of course, do the best they can for themselves, by the aid of their families, heedless too often, undoubtedly, of ultimate consequences. It will be observed in the underground scene so graphically described, the poor little fellow was, and had been, working underground with his father two years. We were not, however, aware child labour was employed so extensively as expressed, nor would we desire to fix a period so advanced as 14 years when boys should be taught to go underground for mining; still we hold, with our author, that at eight or ten years it is a gross outrage on humanity to send a child to such tremendous depths. We think there might be a judicious modification adopted—a graduation of age for depth—not employing children of less than 10 years underground at all, and from that age to 14 only at a certain level, where such dreadful fatigue would not be involved.

Dismissing all our author's poetic fancies, which are all very well in their way, and effective enough, we think with him it is really a pity that children should be so treated. It must be highly injurious to their constitutions, and we sincerely hope that the powerful appeal thus made may awaken a sympathy which will compel stringent measures to be adopted, so as to make the continuation or recurrence of such conduct impossible. The subject certainly deserves the attention of philanthropists, and we shall be happy to second or forward any measures that may be taken for so desirable an end. We feel confident that it only requires to be known in "high places" to be at once remedied: we hope, therefore, that our Journal may meet the eye of those who have the power and the will, when doubtless they will be both successfully exercised. There can be no necessity whatever for cruelty: though the parents and children see it not, yet it is unmitigated cruelty and moral degradation. It is, however, one of those social evils that it is difficult to reach. Appeals to the feelings of parents or immediate employers we know to be useless: nothing but the voice of public opinion will avail, and this we hope will not be withheld. We know that intelligent mine captains and mine proprietors object to the practice, but they are comparatively powerless in the matter.

We mentioned last week that an extraordinary and special meeting of the shareholders of the GENERAL MINING ASSOCIATION would probably be convened, to take into consideration the present position of the affairs and prospects of the enterprise, as resulting from the termination of the duties of the deputation sent home from Nova Scotia to confer with the board of directors in London, with a view of finally adjusting all points of dispute and difference. We now find that it is summoned for the 5th of next month—a day, in the olden time, fraught with ominous import; but on this occasion, at all events, it will be found to be without either "gunpowder treason or plot," and the proprietors of the stock of the association will hereafter apparently "be pleased to remember the 5th of November." It is to be a "red letter day" in the annals of the enterprise.

It is well known that difficulties of many kinds have presented themselves whenever effort has been made to expand the business of the company; and the executive has had to contend with three distinct classes of interests—the home Government, the local Government of Nova Scotia, and the trustees of the Duke of YORK. All these are now brought within a narrow compass; indeed, one is to cease altogether, and the other two are so clearly defined as respects power and claims, that nothing will henceforth oppose the most energetic efforts of the directors to give full force to the powers of production, and increase of their export trade, which the means at their command enable them to do, now that they are unshackled from the annoying interference of red-tapism and captious opposition. The most vexatious and troublesome point has been the payment of dues to the representatives of the Duke of York. These are to be relinquished altogether: but for this, of course, a present money consideration is to be paid, and for this purpose it is proposed to increase the capital stock of the enterprise by the issue of such additional shares as will furnish the sum required. The present holders are to have the refusal of the new security before any portion is offered to the public; and so important and politic is the course suggested by the directors generally considered, that there is good reason to believe the whole of the extended capital will be at once absorbed by the existing proprietor. The new shares will necessarily be issued at a price slightly below the present market value of the existing stock, and this, moreover, will more readily secure their instant apportionment. Altogether the affairs of the General Mining Association are assuming a most encouraging appearance, and when it is generally known that the obstacles which have hitherto existed have been removed, there is little doubt that the stock of the company will be a more favourite channel of investment than has hitherto been the case, for the reasons explained in our recent articles on this subject.

It is evidently a matter of no small difficulty to get within the inner circle of the affairs of the BRITISH ROCK AND PATENT SALT COMPANY. It is guarded on all sides; and every effort, on our part, to obtain information for the satisfaction of our correspondents is met with the utmost opposition by those who can and who ought to furnish the desired particulars. Sooner or later they must be rendered, and this repeated obstruction only creates suspicion stronger that all is not in that order which it should be. In fact, it is as getting into a labyrinth to try and unravel the mystery which seems to pervade the management of this undertaking—indeed, a labyrinth ensconced in a November fog; for persons connected with the Stock Exchange, and known to be closely interested in the association, now even refuse to "make a price" for the shares; so that there is no means of determining the value set on them, and thus inferentially arriving at a proximate idea of the position and prospects of the company.

That gentlemen should become irate at the course we have thought proper to pursue in this business, does not at all astonish us, but strengthens to our minds the necessity of persevering in our endeavours to bring this company to midday light. It is denied that meetings are not held and summonses not duly issued. The fact may be asserted by the advocates for the system of management pursued by the British Rock and Patent Salt Company; but, if so, we are perfectly sure, nevertheless, that they have not been convened by public announcement, or in any other open manner usual with public companies; while equally sure are we that the representatives of the press have not been invited to attend, nor any report furnished.

To all intents and purposes, therefore, in the practical sense of the question, we contend we were quite correct in our assertions of last week;

tuitously communicated; and we must wait until some energetic shareholder takes the necessary steps to remove the unpleasant impressions which exist in the minds of the public as respects this company and the conduct of its affairs.

The reason assigned for the extraordinary increase in the dividend for this year, being a rise of no less than 400 per cent. over those for the last four, is that sheds or warehouses have been recently erected, so as to enable the company to make and secure large stocks of salt during the dull season, and thus be ready to supply the market at the proper moment, and to extend its sales to this marked extent. If this be so, it certainly is marvellous that these sheds or warehouses were not constructed years since, and does not reflect credit on those who had the active management of affairs; but it is only reasonable to suppose that other causes have assisted in effecting, if not occasioned, this augmented division of profits; and it really appears difficult to consider that the existence, or non-existence, of sheds could create such a decided change.

At all events, it could not have been a sudden matter, and why, therefore, it is asked, was not a dividend or an instalment thereof paid in April, instead of keeping the shareholders until October, when such large sums must have been at the disposal of the executive for this purpose? The argument is sound, and the only reply to be given by us is, that it is merely another point of mystification, for which the company seems determined to make itself notorious.

If we are rightly informed, the charter of the Association—this supposes the existence of a charter—requires that two meetings shall be held yearly, and that notice shall be given in the *Times* and *Chronicle*. We will, therefore, close our present remarks by asking whether this statement is correct, and silence on the part of the secretary, or other official, we shall regard as an admission of its truth.

The competition of English iron, to which allusion was made by our Paris correspondent two Journals back, is still the subject of serious debate among our neighbours, and complaints are made that irons, admitted free on condition of being employed exclusively for naval construction, are sold to the general trade by importers. There may be some truth in this allegation, for where protection duties exist their evasion grows into a regular trade. The attention of French ironmasters is still further occupied with this question, in consequence of the appearance of two decrees in last Tuesday's *Moniteur*, both dated 17th of the present month, relative to the importation of metals. According to the first, shipping iron, admitted free, is limited to articles of large dimensions—flat bars of 458 millimetres thick, and 916 millimetres broad; square bars, 22 millimetres on each side; and rods, 15 millimetres or upwards in diameter. Rolled iron of irregular forms, when they are to be employed for like purpose, are to be admitted free, provided they have been made from bars or rods of the same irregular form. This, I presume, refers to the different portions of the framing of ships composed of T and angle iron. Sheet-iron must be at least 2 millimetres in thickness. In no case will goods in a less advanced state of manufacture than specified above be admitted on these favourable conditions. Ship builders, and those engaged in manufacturing articles intended for the rigging, fitting out, and furnishing ships, are alone entitled to the benefits of the present decree, and a former one dated Oct. 17, 1855. The articles in this last, relative to the francisation of foreign ships, is extended to October 17, 1858. The second decree declares, in that conformity with the 6th article of the law of July 5, 1836, rough cast-iron, bars, T, angle, and plate iron, steel bars, together with copper, or its alloys, which may be imported from abroad, and made up in French workshops into articles for exportation, are to be admitted free when these raw materials are converted into ships, steamers, machines, or apparatus, either for the establishment or service of railways, or for industrial or civil constructions, or manufactures in metals. To enjoy the benefit of this arrangement, forge masters, constructors, or manufacturers must exhibit orders from abroad, and conform with the following conditions:—The constructor, &c., must present to the Minister of Agriculture, Commerce, and Public Works, a petition setting forth the character and extent of the orders to be executed, the nature and quantity of metals to be employed therein, and the nature and character of the goods to be re-exported. Engagements must also be entered into to comply with formalities, and supply proofs that may be deemed necessary, either by the Minister of Finance or by the Minister of Commerce.

Every petition must be accompanied by *pieces justificatives*, to be examined by a consulting committee of arts and manufactures. The Minister of Commerce is to give his decision after consultation with the Minister of Finance. The metals alluded to must be imported under the French flag, or under the flag of the nation that produced them, and the conditions mentioned in the first decree, relative to the dimensions of the irons, is also applicable under the second one. Importers are to give security to re-export, to lodge in a bonding warehouse, within six months after entry, the articles manufactured from metals imported, of the same weight and without any allowance for loss for making up. In all cases the goods must exhibit an advanced state of manufacture beyond what that they had when imported. Such are the principal features, in outline, of the two decrees, which have created an inconsiderable commotion amongst the trade. It is stated, however, authoritatively, in one of the French papers, that if the provisions of the decrees are faithfully observed—that is to say, if the importations are employed only for naval constructions and exported goods—there is no fear of native ironmasters having to compete with foreign produce in the interior markets of France, especially as the prices of French irons have been lowered. As a proof of the correctness of these views, it is asserted that coke irons from the North may be brought to Paris for 300 frs. or 310 frs. the ton; and charcoal roll, either from Champagne or Burgundy, for 320 frs. or 330 frs. the ton. Welsh iron of second quality which resembles the northern French iron, cost, delivered at Havre, including price in Wales, carriage, insurance, and commission, 230 frs. the ton, Custom dues, &c., 80 frs.; carriage from Havre to Paris, 15 frs., and incidental expenses, which would make the total cost of Welsh iron in Paris 332 frs. the ton. There is, however, an advantage in Welsh iron resulting from their peculiar classifications. Scotch and Staffordshire irons may be imported under more favourable conditions than Welsh, which resemble the charcoal rolls in quality; they are delivered at Havre for 260 frs. the ton, which, with the additions as in the former case, will bring up their cost to 362 frs. the ton.

THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL [FROM OUR CORRESPONDENT IN WEST CORNWALL.]

OCT. 22.—The difficulties of the money market continue, and must have a depressing effect, for the time, upon the trade of the country. The trade in metallic manufactures must suffer to some extent, and there are those who apprehend that the copper standard will still further decline. But it should be recollected that the stock of foreign in the country is at present small; and, consequently, any decline will soon be followed by a reaction. The commercial panic and stagnation of trade in America will, no doubt, affect the demand for tin to a considerable extent; but commercial affairs in the States do not generally continue long depressed, and a renewed demand will immediately attend a return to a healthy course of business. The consumption of tin for manufacturing purposes has of late years so greatly increased, that the price of this metal cannot remain low for any length of time.

There have been enquiries for shares in several mines during the past week, but the sales effected have not been numerous. Dolcoath shares are at 3207, and difficult to be obtained. The ends of various levels in this mine are altogether worth 3207 per fm., and the stopes and pitches are producing large quantities of tin-stuff. The shaft is sinking below the 242, and the 242 west, on the north part of the main lode, is worth 1207 per fm.; the 242 east, 207 per fm.; the 220 and 230 fm. levels west, are each worth 507 per fm., and a winze sinking below the 230 is worth 1207 per fm. The shaft is nearly down to the 254. It is a most remarkable mine, having this immense tin deposit in depth, whilst, at shallower levels, it was a very productive copper mine. The copper ores sold from this mine from 1815 to 1856 amounted to 241,522 tons, which realised 1,364,5547. The mine is now selling tin to the amount of between 40,0007 and 50,0007 a-year. Wheal Seton was formerly a good mine, having sold upwards of 300,0007 worth of ore, but its productiveness has fallen off very much of late years. The agents, however, are endeavouring to resuscitate the mine by driving cross-cuts for the intersection of other lodes, amongst them West Seton north lode. West Seton shares are at 3457, and are difficult to be obtained. The mine continues to be very rich in the bottom; the 100 east is worth 507, and the 100 west 907 per fm. There are four stopes yielding on an average 137 tons each of good ore per fm.; these

our stoves are worth 430/- per fm. The shaft sinking below the 100 produces 16 tons per fm. The adventurers appear to have one of the richest prizes that has ever fallen to the lot of mine shareholders. South Frances shares have advanced, in consequence of the mine looking better. East Bassett shares have receded; it will be a long time before the 80 cross-cut can intersect the copper lode.

At the United Mines, the Hot lode is at present not looking so well in the 200 as in the levels above, but an improvement is expected in driving further east of Taylor's shaft. The Hot lodes in Wheal Clifford is very productive in some stoves in the 200, where the lode is producing from 13 to 15 tons per fm. The mine is likely to increase in productiveness, but the expenses are very heavy. Copper Hill shares are well held; the price, however, has somewhat declined. West Bassett are about 25/- Wheal Margarets had declined, but have again advanced, in consequence of an improvement. Alfred Consols is reported to be looking better. It is stated that an improvement has taken place in South Ellen. At East Falmouth a dividend of 2s. 6d. per share has been declared. An improvement has been reported in North Frances, and shares have been enquired for. South Seton shares are at 8d. At South Carn Brea, it is expected the deep adit cross-cut will very shortly intersect the lode. Great South Tolgas shares are about 18/- 5s. Cargoll, 10/- At Wheal Jane a dividend of 30s. has been paid; price of shares about 17/- Wheat Margery shares, from 11/- 10s. to 12/-

The subject of mineral deposits is one which has considerably engaged the attention of scientific men, and must be of great interest both to mining and to science generally. At the recent Royal Cornwall Polytechnic meeting there was a note read from Mr. Enys with reference to the cleavage of rocks, accompanied with a drawing of the cliff at Beechy Head. This gave rise to some remarks by Mr. Robert Were Fox, whose researches with regard to mineral deposits in lodes are well known. Mr. Fox referred to some of the phenomena existing in Cornwall, such as the difference between the quartz of cross-courses, and the quartz of east and west lodes—the one being generally solid, while the other was commonly more or less striated: also to the definite arrangement and deposition of ores in lodes; in some mines the lodes being found most productive in granite, in others in clay slate or killas, and in others in elvan or porphyry. So that the deposition of ores did not seem to depend on the chemical character of the rocks, but on some higher and more general causes. In some of the lead mines in the North of England lead ores were found in limestone, but ceased entirely in sandstone; whilst in other neighbouring mines lead had been found in sandstone, and it altogether ceased in the limestone. This seemed to show that there were definite forces in action in the earth, which affected the mineral deposits in rocks independently of the chemical nature of those rocks. Mr. Fox thought that miners might greatly aid the solution of such questions by the communication of facts coming under their notice. I need not dilate on the importance of this subject. If the conditions under which mineral deposits are found in the different districts of Cornwall were more accurately and minutely known, mining, in all probability, would be much more certain in its results. If mining agents would closely observe and minutely note down the changes of strata, &c., which accompany the variations in the productiveness of lodes, and send their observations periodically to the Polytechnic Society, a mass of most valuable facts would soon be accumulated; and then such men as Mr. Robert Were Fox might be enabled, from these numerous data, to deduce general laws, which might be of the utmost service to the future progress of mining. Cornish mining captains are generally very close and shrewd observers, and many of them know more, even in a scientific way, than some persons are inclined to give them credit for. If they would only give men who are accustomed to arrange and generalise possession of facts familiar to themselves as coming under their observation in practice, they would be likely most materially to aid in the advancement of mining as a scientific and profitable pursuit.

It was mentioned in the Journal of last week that three tributaries who took bargain in Balleswidden Mine had been summoned before the magistrates for failing to complete their bargain. They were to stop over the 70 fm. level, to open the pitch 6 fathoms long, and carry all the width of the lode—the takers to have 24/-, and 10s. in 12. on the ton raised. They worked three months, and then finding the work unremunerative they left the job incomplete, and went and worked at another mine. The case was dismissed, because the captain had not entered the bargain in the book at the time it was made; and defendants' advocate also stated that he had a good answer to the case on its merits. I may remark on this case that the agents of Balleswidden took a very proper course in summoning men who fail to complete their bargains. The men sometimes get subsist, and then finding their pitch poor, run off and leave it. In some cases there has been a considerable loss to adventurers through such dishonest practices, and wherever miners behave in this way they ought to be summoned for doing so.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

[FROM OUR CORRESPONDENT IN SOUTH WALES.]

OCT. 22.—We have again to report the occurrence of several fatal accidents this week in various parts. At Aberdare inquests have been held on the bodies of Thomas Williams and Enoch Isaacs, the former aged 57 and the latter 16 years. At the inquest on Williams a witness stated that he and several other men were going down the Graig incline, belonging to the Gadley Iron Company, when they met the deceased coming up. The trams were working at the time, and as the carriages approached him he stepped off the way between the other rails. At this moment the ascending carriages caught him up and passed over his body, killing him instantly. It was shown that deceased had no right on the incline, and no fault was chargeable to the persons working it. With reference to Isaacs, a door-boy, it was by the evidence proved that the accident was of a similar nature to the last. Underground in the colliery is an incline, and deceased was trying to hitch a tram to some others when he got jammed between them. In both cases verdicts of "Accidental Death" were returned. At Merthyr an inquest has been held on the body of an excavator, employed on the Rhymney Railroad, who was killed by falling down a perpendicular rock, about 67 feet deep.

Two men have been severely injured by a fall of coal in the Cwm Pit at Rhymney. There was also a slip of coal in the tramway of the Daffynt Pit, by which a man called "Shawn Filler" was killed, and the brother of the same person had his leg and collar bone broken; it is hardly likely that he can recover.

An accident also occurred last week through the explosion of fire-damp in a mine at Abersychan, belonging to the British Company. At the inquest on the body of the sufferer, William Gauntlett stated that he was at work in the next stall to deceased on the day of the occurrence, when an explosion of fire-damp suddenly occurred. The witness was prostrated by its force, and remained insensible for some time. When he recovered he walked through the works, and there saw deceased lying upon the ground badly burned. The doctor of the works attended him, but he expired, notwithstanding every attention. The witness added that he had worked in the mine for years, and never saw fire-damp in it before. The jury returned a verdict of "Accidental Death."

In Rhymney, Blaina, Abersychan, Blaenavon, Ebbw Vale, and, in fact, throughout the entire mineral district, notices have been posted at all the works of an immediate reduction of 10 per cent. in the wages. The step was resolved upon at a meeting of ironmasters, and is no doubt felt to be necessary on account of the condition of the money market, and a sudden depression which has in consequence taken place in the iron trade, but we have some apprehension as to the result. It is difficult to convince the workmen of the actual necessity which exists for the reduction of their wages, and as they know very little about the money market the cause assigned will be almost unintelligible. We can only hope that none of these disastrous turnouts will take place which have occurred in this district too often in former years, and that the men will yield, like their masters, to the exigencies of circumstances which no man has the power to alter or provide against. We have likewise to report that the tin works in Monmouthshire are in a very slack state at the present moment.

From the North Wales district we hear intelligence of rigorous proceedings being taken against a variety of colliery proprietors for breaches of the Coal Mines Inspection Act. The actions were brought at the instance of Mr. Peter Higson, Government Inspector, before the magistrates at Mold, Flintshire, and the total number of cases were 21. Four charges were made against Mr. Charles Harrison, manager of the Coed Gwen Colliery, for breaches of the 3d, 6th, and 7th general rules, and also the 32d special rule. In each of these cases fines were inflicted, amounting with costs to 45. 11s. 6d. The same defendant was fined 21. 11s. for violation of the 6th and 7th general rules in the management of the Wood Pit, and 37. 6s. for neglect of the 3d, 6th, and 7th general rules in the Coed Talon Colliery. Mr. Thomas Hopwood was also fined, with costs, 31. for breaches of the 5th and 6th general rules, and 3. 10s. for neglect of the 3d, 6th, and 7th general rules, and for omitting to submit special rules as required by the Act. Mr. J. Hopwood, of the Tryddes Lege Colliery, and Mr. John Ellis and others, of the New Firm Colliery, were mulcted in various sums for similar offences. The magistrates expressed a hope that these examples would act as a warning to other colliery proprietors and managers, and the Government Inspector signified his determination to institute proceedings against all parties who refused or neglected to comply with the provisions of the Act.

The inhabitants of Merthyr are at present involved in a noisy storm of their own brewing. We referred, a short time ago, to a meeting which had been held for the purpose of authorising an application to Government for a charter of incorporation for the town. The rate-payers, however, seem to be far from unanimous on the propriety of adopting such a measure, and a public meeting was held last week for the express purpose of opposing the resolutions passed at a previous meeting. The reports state that the room was packed with workmen from Plymouth and Cyfarthfa; but we have sufficient reason to believe that this assertion is not warranted. The meeting was presided over by a highly respectable person, and the entire proceedings were conducted in a fair and open manner. The first resolution, moved by Mr. Hill, expressed the satisfaction of the meeting with the present arrangements for the management of the town, and their disapprobation of any application being made for a Charter of Incorporation. An intimation was also received from Mr. Crawshay, the

ironmaster, that he was decidedly opposed to the charter. Mr. W. R. Smith then moved the following amendment to Mr. Hill's motion—"That, in the opinion of this meeting, the true interests of the town require that it should be incorporated." He argued out his views at considerable length, not without many symptoms of the adverse feeling of the meeting. The amendment was duly seconded, and other persons addressed the meeting, when a rather farcical incident took place, which brought the proceedings to an abrupt and quite unexpected termination. A person entered the room, and stated that he had let it for a concert, the performers in which were waiting to begin. The audience, however, were just getting thoroughly well warmed up to speaking point, and they refused to separate, each one being desirous of "saying a few words" before he left. The concert people now adopted a *coup d'état* which effectually accomplished their end—they turned off the gas in the hall, and left the disputants huddled together in the dark. Further business, under these melancholy circumstances, was impossible, and the people separated, without either the original resolution or amendment having been carried.

The verdict of manslaughter against the station master at Stormy, for the part he took in the recent accident on the South Wales line, has given general satisfaction. It appears to be universally considered that his negligence was very great, and to make an example of one railway official may have a good effect generally.

THE IRON AND COAL TRADES OF STAFFORDSHIRE.

[FROM OUR CORRESPONDENT IN WOLVERHAMPTON.]

OCT. 23.—The state of the money market is the keystone of the present position of the iron trade, as of every other branch of manufacturing industry. The advance of the rate of discount to 8 per cent. is regarded on all hands in this locality as a prudent step, urgently called for by the state of things in America, and is calculated to arrest the flow of capital to that country. The amount of the rate of discount is the less serious, when it is considered that comparatively high rates have prevailed for some time back. It will have no serious effect upon the principal firms here, as their capital is quite equal to any such emergency; but those who rely largely upon credit, and whose existence is dependent upon their large advances from bankers, will doubtless find that present rates will greatly diminish profits, and that the caution exercised in discounting bills will somewhat clog their operations. At the same time, so effective have been the warnings of 1855, that an almost entire absence of speculation has for some time prevailed in this district, and the result is now that general confidence exists, and none of those portentous rumours are heard which usually accompany such a financial crisis as the present. Doubtless those acquainted with the value of American securities, and who are able at the present moment to command the means, will make fortunes by purchasing at the present inordinately depressed rates, the result of that universal alarm and absence of confidence which appears to have deprived the commercial men of the States of their sober sense. The intimate connection that exists between all nations engaged in commerce is strikingly evinced in the rapidity with which a monetary panic on the western shores of the Atlantic makes itself felt in almost every commercial establishment in Europe.

So far no immediately serious results are spoken of in connection with the trade of this district. It is understood that some parties hold American bonds, but they are quite able to bear the present panic, and the houses which deal largely with America, and which will probably suffer to some extent, are possessed of ample means to sustain a much greater draught upon their resources.

The immediate result with respect to the demand for iron is almost entirely to stop all exports to the United States, and to cause the greatest possible caution in all transactions. Manufacturers generally have sufficient orders to keep them employed for some weeks, and many of those who had received American orders, which were either countermanded, or which they declined to execute, are manufacturing the iron and stocking it, under the conviction that the present crisis will not be of long duration, and that the demand will revive as soon as it subsides. The home demand remains good, and orders are also tolerably plentiful from the Continent and Australia. Pigs are necessarily heavy, and stocks are said to be increasing. An attempt has been made by the proprietors of blast-furnaces about Dudley to come to a mutual understanding to blow out a furnace each until the state of the trade improves. There can be no doubt that this would be a wise proceeding, if it could be carried out, but no very sanguine expectations are entertained that it will be acted upon. Pig making cannot possibly be very profitable at the present moment, seeing that pigs are 10s. per ton lower than they were but a year or two ago, while ore and wages have undergone no reduction whatever.

Some are of opinion that the American demand will be better after the present panic is over than it was previously—that the failures of iron manufacturers in the States are the result of a vain attempt to compete with English iron, which has been rendered utterly impossible by the late reduction in the tariff, and that will have the effect of diminishing the native make, and compel more extensive purchases from this country.

With reference to the inferior character of some of the plates tested at Lloyd's, last week, it is thought that these were not of South Staffordshire make. The result of the test only more fully confirms the necessity for obtaining a guarantee that the iron used in shipbuilding is good. There can be no doubt of the real dearthness of the inferior iron sold at low rates for almost every purpose to which iron is applied, but the urgent necessity for extreme care, when there is nothing but the quality of the material between a ship's crew and destruction, is peculiarly apparent.

An advertisement in another page announces a work on the iron trade, by Mr. J. Rose, of Bateman's Hill Iron-Works, Bradley, near Bilton. It appears to be a practical guide for those engaged in the trade, and its author's practical experience will probably render it a valuable because a reliable guide.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

[FROM OUR CORRESPONDENT IN CHESTERFIELD.]

OCT. 22.—From the rapid advance in the rate of discount, the position of monetary affairs in America, of warlike affairs in India, coupled with numerous failures at home, it will not be matter of surprise if, at no distant period, these depressing influences should exercise a prejudicial effect on the iron trade generally. At present the reports of the trade in these countries are generally favourable, though a greater degree of caution is observable in the transactions of the past week. Scotch pig-iron has declined considerably, and prices have been irregularly maintained. The demand for manufactured iron is somewhat lessened, and continental orders for rails have also fallen off. The requirements for iron for home consumption are tolerably large, and prices, on the whole, are well maintained.

The coal trade is reported to be better, with a probability of a greatly increased demand on account of the approach of winter. The late colliery explosion at Ripley, Derbyshire, is exciting a melancholy interest. Since our last, two more sufferers have died; the rest of the injured, we are glad to learn, are in a state likely to recover. The Butterley Company have been very liberal to the friends of the deceased and injured men, in providing for the decent and suitable interment of the dead, and for the comfort of those who are surviving.

The American panic has produced a corresponding depression in the steel trade, as it is known that America is a large customer of ours. The Sheffield steel merchants were taken completely by surprise on receipt of the intelligence, and fears were at once entertained that some heavy losses would be sustained, but such, however, has not proved to be the case. It is believed, however, that with abundant crops, reduced taxation, and other advantages, our transatlantic brethren will again recover their position. The panic may be over by Christmas, and if the markets are not glutted a good spring trade may be confidently anticipated.

We have not yet had an opportunity to communicate this week respecting the lead mining operations in Denbighshire. The Mill Town Mine, at Ashover, near Chesterfield, is doing well, and if we mistake not this mine will make a noise in the mining world before long. The North Derbyshire Company had a meeting on Friday last, at Calver, when it was agreed to commence operations at the Calver Sough shaft. It was also agreed to put down an engine of 60 horse-power. The company's mine at Wren Park was in operation again when we last wrote; but the news had not reached us at the time. It would seem that one lift pump has kept down the water, but another lift will be put in as soon as possible. There is some very fine ore on the bank, and it seems to be the opinion of the agent, Mr. Bentley, as well as others who have inspected the property, that the mine will be a valuable one.

The Stoneyway Mining Company, at Matlock, commenced to pump for the first time about Thursday week, and on Monday "business" might be said to have fairly commenced. We hear to-day that a portion of the shaft has fallen in, but the intelligence reached this town too late to afford time for verification.

The Mill Dale Mining Company have had two meetings this week. On Wednesday several of the directors visited the mine, for the purpose of ascertaining from those most likely to be informed the quantity of water it might be found they would have to contend with. The adjoining mine, which is private property, has an engine of 14-horse power, which is only worked a few hours per day, and it was believed that an engine at Mill Dale of 20-horse power would be amply sufficient. The company, however, have in view a 40-horse pumping-engine, which they can purchase cheap, and it was decided to purchase one of that power, so as to be prepared for any "push" of water. The consumption of coal will not be so great as might be expected, as it would not be necessary to work up to the full extent of power. It was also decided to sink a new shaft, as the present one, which is too narrow for all the purposes of machinery, could be worked to a good profit. The company are preparing the scrip, which will be issued in the course of a week.

STOCK, MINING, AND RAILWAY SHARES IN IRELAND.

[FROM OUR CORRESPONDENT IN DUBLIN.]

OCT. 22.—The stock markets have been very sensitive this past week, but here the prices have ranged somewhat higher in proportion than those of London, and shares have been little, if at all, affected by the low prices of funds. Mining Company of Ireland shares have been quoted a shade lower, but Wicklow Copper shares are without alteration. General Mining Company shares are seldom dealt in, but matters there seem rather better than they were. The following are the latest quotations:—Consols, 85; New Three per Cent., 88½; Hibernian Bank, 32½; National Bank, 36; Royal Bank, 21½; Grand Canal Company, 36; Consumers' Gas (ex div.), 7½; Mining Company of Ireland, 14½; Wicklow Copper Mine, 32; Cork and Passage Railway, 11½; Belfast Junction, 35%; Dublin and Kingstown (ex div.), 16½; Dublin and Wicklow, 5½; Dundalk and Enniskillen, 12%; Great Southern and Western, 97½; Midland Great Western, 48; Waterford and Limerick Company, 18.

Your correspondent in the South of Ireland is again, I observe, giving you a hint about the necessity of working the lodes in the district of Crookhaven, and in other parts in that neighbourhood. And I think it only right to draw special attention to his remarks, and all must agree with him, that an effort is scarcely made to do so in the development of these or other districts favoured by Nature. I am glad to see, however, that your correspondent is adopting the *oil desparandus* suggested by Mr. Tredinnick in his useful remarks. I must say there exists—and I regret that it does—a very great feeling against Irish mining; and this feeling has been entirely engendered by illegitimacy—I will not say mining, but parties in connection with mining, which have to a large extent poisoned the minds of the public, and have prevented them from embarking in sound and good undertakings. Now, *ex gr.*, I was one of the first to bring under public notice, and to direct attention, to the admirable discovery made by Mr. Johnson in producing gas from peat. At first considerable

doubt was expressed, shoulders were shrugged, and a redhot iron could not act a more useful part in making these "cautious" individuals draw their hands away, than the idea of forming any kind of company to work out, license, or in other way make use of Mr. Johnson's patent. Now, many of them would like to join, if they could; but Mr. Johnson's private enterprise has already done more than some of his most sanguine admirers were anticipating. He has some of the finest mansions in the country lighted with bisgas, and to-day I had the gratification of hearing that on Tuesday a portion of the magnificent mansion of Sir Charles Cooke, Bart., M.P., at Ballylinn, was lighted with peat-gas. My prediction in this case was perfectly correct; I think it will also be so in the case of two mining companies at present on the topis—namely, the Milltown Silver-Lead Mining Company, and the Givernau Mining Company. To both of these companies I have before alluded, and will not do more so at present than to make an extract from the report furnished by Mr. F. Linche, as consulting engineer to the proprietor of the Milltown Mine. It so clearly and fully bears out my own views, that I cannot refrain from inserting it here:—

"You are aware that a strong prejudice exists in England against Irish mining. I fearlessly state that such prejudice is unfounded, but nine times out of ten any disappointment that have attended Irish mining have been caused by mismanagement, and the seat of government being too distant from the works. Let, therefore, your board be in this city; you will find men of sterling respectability ready to join you, who being on the spot will attend to the affairs of the mine, and being identified with the people of this country, will stamp the undertaking as legitimate, and as founded on true honest principles, be it successful or otherwise. The Milltown Mine is at present producing a profit, the works have only to be extended to produce more."

The Givernau Capitalists will, I suppose, be equally successful.

The Irish Peat Company, it appears, is more likely to prove remunerative to the company than was generally supposed, since, notwithstanding the rumours that the company must be wound up, they are enabled to advertise that they are prepared to deliver charcoal for deodorising and agricultural purposes, either at their works at Athy, or in Dublin Harbour. Mr. Hill's report, which will be presented at the next meeting, will, no doubt, be highly interesting.

INDUSTRIAL PROGRESS ON THE CONTINENT.

[FROM OUR PARIS CORRESPONDENT.]

OCT. 22.—In the Champagne iron markets there may be observed symptoms of decided improvement. Pigs have been sold at from 152-50 frs. to 157-50 frs. the ton, and the quotations may be said to be firm at 155 frs. Pigs for second melting are without alteration, at 180 frs. No. 1, and 170 frs. No. 2. Orders have come in very fairly for this season, but no alteration in prices is anticipated before the new year. Rolls, free in any of the Eastern Railway stations, are quoted at from 330 frs. to 340 frs.; and forge iron, at the station nearest the works, at from 370 frs. to 390 frs. These prices are expected to keep up those of rail iron. The following are the quotations here for heavy castings:—Plates, 190 to 200 frs.; pipes, joints, and elbow-pieces, 250 to 260 frs.; spouts, 250 to 260 frs.; axle-boxes weighing 5 kilos. and over, 250 to 230 frs., and weighing less, 340 to 360 frs.; clock-weights, large, 220 to 225 frs.; ditto, small, 230 to 235 frs.; smith tuyeres, 250 to 260 frs., according to the locality of the works, and the importance of the orders. Stocks in Paris are not heavy, and rods are priced at 400 to 410 frs. for Nos. 2 and 21. Coke rolls at 300 to 310 frs.; charcoal rolls, 320 to 330 frs., delivered free in Paris, but according to the amount of orders. In warehouses, the quotations are—Coke rolls, 310 to 320 frs.; charcoal rolls, 331 to 340 frs.; English iron, 300 frs.; nail iron, No. 18, 500 frs., with a margin of 5 per cent. Iron wire has not altered; bright, 945 frs.; annealed, 925 frs. In other metals there is no alteration to chronicle.

[We shall give the particulars of a further modification of Du Tremblay's combined steam and ether engine in next week's Journal.]

The following are the Customs returns for last month, and for the past three quarters of the year:—

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of the early receipt of their letters, and a delay of six or seven days is needlessly occasioned. By a Treasury minute of the Home Government of April 11, an offer was made, as an inducement to South Australia to join in the Government postal plan, that the homeward mail steamer should call for the Adelaide bags at Kingscote Harbour, Nepean Bay, but this partial recognition of the rights of South Australia the Legislature has rejected, so that it is clear that nothing less than the actual calling of the mail at Nepean Bay, both outward and homeward, will secure any proportion of the general subsidy from South Australia. The Adelaide Chamber of Commerce, in its report of Aug. 5, "expresses a preference to pay extra postage rather than to subsidise the present postal scheme, which ignores their geographical position. Dispatches, however, are on their way to the colonies from the Home Government, which will have the effect of finally adjusting the differences as to postal communication with the mother country, and to the benefit of each of the different provinces. The requirements of South Australia in this matter are only reasonable and just, and she even foregoes the original demand, that the steamer should run up the Gulf of St. Vincent to the Port of Adelaide. The statistics for the past half-year show a considerable increase in the revenue, exports, and mineral wealth of the colony. The flour shipped during that period amounted to 15,000 tons. Great progress was making with the intercolonial telegraph.

CALIFORNIA.—A rich ledge of gold-bearing quartz has just been discovered at San Raphael, in Marin County, across the bay opposite to San Francisco, which has excited notice from the rarity of the discovery in the coast chains of hills. It has hitherto been supposed that the gold deposits were confined to the spur off from the Sierra Nevada Mountains. If found in the coast range to any extent the discovery will be most important, as the situation—so near the sea—will justify the shipment of quartz to England for reduction.

CHEMICAL GLEANINGS.—No. VI.

BY RICHARD V. TUDOR, F.C.S., F.R.A.

IODIDE OF ALUMINUM.—M. Weber, after referring to the fact of Wöhler having failed in preparing iodide of aluminium by a method similar to that usually adopted for obtaining the chloride, states that he has prepared this compound in the following manner:—1 part of aluminium filings, and 10 or 11 parts of iodine, are carefully heated in an hermetically sealed tube. Combination of the two elements is accompanied by the evolution of heat, and a beautiful violet light. Iodide of aluminium prepared by the above process forms brilliant white crystalline laminae, which, when heated out of contact with air, fuse into a very liquid fluid, boils, and ultimately sublimes. When heated in the air it is quickly decomposed, iodine being separated. On being exposed to the air, iodide of aluminium fumes strongly and deliquesces. It dissolves in water with the evolution of much heat, and the solution produced soon becomes brown, if in contact with the air, from the separation of iodine.

PURIFICATION AND PROPERTIES OF MAGNESIUM.—MM. Deville and Caron have confirmed by experiment the opinion entertained by Wöhler that magnesium is volatile. Magnesium melts and volatilises at nearly the same temperature as zinc. Its specific gravity is 1.75. It may be easily cast, and receives a good polish. To prepare magnesium, an intimate mixture, composed of 600 chloride of magnesium, 50 chloride of sodium, 50 chloride of potassium (the two latter salts previously fused and pulverised), 100 pure fluoride of calcium, and 100 small fragments of sodium is introduced into a red hot earthen crucible, and the lid closed. During decomposition a hissing noise is observed, and when this ceases the lid of the crucible is removed, and the mixture stirred with an iron rod until it appears uniform, and the upper part of the liquid mass clear. The crucible is now taken from the fire, and when the saline contents are still on the point of solidifying, they are to be again stirred with an iron rod, which causes the suspended particles of metal to collect together. The mass is then poured out upon a plate of iron, when encolit is broken up, and the globules of magnesium picked out. The amount of magnesium yielded by the above mixture is 45 grammes. This method is said by Prof. Wöhler to be very successful, but he recommends that, instead of pouring the melted mass on to an iron plate, it should be allowed to cool in the crucible, which, in order to get the metal, has, of course, to be afterwards broken. Magnesium obtained as above is not pure. Its purification is effected by placing the crude metal in a charcoal tray, within a tube of the same substance, and heating it nearly to whiteness in a current of hydrogen gas. If the tub be placed in an inclined position, the metal condenses beyond the charcoal tray, and may then be easily removed. The metal is then re-melted with a mixture of chloride of magnesium, chloride of sodium, and fluoride of calcium. By gradually increasing the quantity of fluoride of calcium, the flux becomes less fusible than the magnesium, which may be poured off just as the former solidifies. If the current of hydrogen used in the distillation of the magnesium flows too rapidly, the gas carries some metallic dust out of the apparatus, which, on ignition, produces a very brilliant flame, and is a very brilliant lecture experiment.

PRESERVATION OF WOOD, &c.—Dr. Voho adds caustic soda to creosote until it becomes mixable with water, and applies the mixture so produced to wood. When the wood is thoroughly impregnated with this liquid it is introduced into a weak solution of sulphate of iron, which fixes the creosote. Wood treated in this manner, after being exposed to the various atmospheric influences for eight years, exhibits no sign of decay. The author's method of preserving ships' cordage and sail-cloth consists in immersing the material to be impregnated in a dilute solution of glue, then passing through a decoction of oak-bark, and lastly saturating it with creosote. Sail-cloth, after being submitted to this treatment, stood for six years apparently without having undergone decay.

ORIGINAL LOCOMOTIVE ENGINE OF TREVITHICK.—In order to preserve the memory of the Locomotive or High-Pressure Tram-Engine, invented by that great mechanician, Trevithick, Mr. Ellis, the well-known engineer, of Pontypridd, has prepared a lithographic drawing of this engine, in accordance with the testimony of Ross Jones, who aided in the fitting, and William Richards, its driver. This lithograph, which is well executed by Mr. Campion, of the Patent-office, Strand, is published at the office of the *Mining Journal*, where the original sketch is preserved. Underneath the drawing it is stated that the engine was designated on the original plan, dated 1803, as "Trevithick's High-Pressure Tram-Engine," and was constructed partly in Cornwall and partly at Pen-y-darren Works, by Richard Trevithick, engineer, for Mr. Samuel Homfray, proprietor of the Pen-y-darren Iron-Works, Merthyr Tydfil, who, while discussing the principles and feasibility of locomotive steam-engine power with Mr. Richard Crawshay, of the Cyfarthfa Iron-Works, made a bet of one thousand guineas that he would convey by steam-power a load of iron from his works to the Navigation-house (nine miles distant), along the basin tramroad, which, by means of this engine of the great Trevithick, he afterwards effected, and won his wager, although the heavy gradients, sharp curves, and fragile nature of the cast-iron trackway operated against the return of this ingenious though rudely constructed machine with the empty trains: hence its discontinuance. In this engine the exhausted steam was discharged into the chimney stack, and the wheels were combined together, so that to Trevithick is the credit due for the application of those two principles to locomotive engines. Ross Jones, who aided in the fitting, and William Richards, its driver, and the latter, now in his 85th year, has worked no other than Trevithick's high-pressure engine. To this day portions of the engine exist in the one he now works at Pen-y-darren, and during a period extending far beyond half a century never having had an accident with his boiler.

COLLIERY INSPECTION (from a Correspondent).—An instance of the usual course of action pursued by certain of the Government Inspectors of Coal Mines, in cases of non-compliance with the Act, was given in the mode adopted recently in bringing actions against the Broadmore Colliery, through their manager, Mr. James Spencer. The boilers of the winding and pumping-engines were not provided with a proper steam gauge; no means were provided for signalling from the top to the bottom of a shaft; the ventilation was not perfect; safety-lamps with locks were not provided; there was no break attached to the machine used for raising and lowering persons; and the copy of rules was not given to four men, nor hung up in the office. For this negligence no less than 11 separate informations were laid, the penalty being £1, and costs in each case. Now, it is not argued that 20*t*. is too great a fine for so large an amount of negligence, but it certainly appears hard that failing to supply rules to four men should subject anyone to four indictments. All that is required is that justice should be tempered with moderation; satisfaction would then be given to all.

WORKING IN A COAL MINE WITH A NAKED CANDLE.—Thomas Waterhouse was summoned for working in the Morton Colliery with a naked candle, contrary to rules.—The defendant admitted having used the candle, but said it was a common practice in the mine.—Mr. Trafford fined him 2*s.* and costs, remarking that it was an extraordinary thing that he should be obliged to find a man in order to make him take care of his own life.

COLLIER'S DEATH BY NEGLIGENCE.—John Marshall sacrificed his life at Mears, Day and Twibell's Mount Osborne Colliery, Barnsley. He was getting coal, and had undermined the soft bed too far, without using "chucks," or props, to keep up the coal, which caused a large quantity to fall and kill him on the spot.

CAUTION TO CHARTERMASTERS AND COLLIERIES.—At the Burmire Police Court, John Thomas, chartermaster at the Bewhurst Colliery, Sneyd Green, the property of the Silverdale Company, pleaded guilty to a charge of neglecting to examine the pit before the men entered it, thereby making himself liable, under the 20th special rule made pursuant to the provisions of the Coal Mines Inspection Act. Mr. Harding, on behalf of the Silverdale Company, said that the defendant being a man of good character, the company did not wish a heavy fine to be inflicted, but such a one as would be a caution to other men. Fined 1*s.* and costs, or 1*d.* days in default.—Thomas Scarlett and Joseph Wilmut pleaded guilty to proceeding to their work at the same colliery before the pit had been examined by the previous defendant, thereby breaking the 38th special rule, made under the provisions of the Coal Mines Inspection Act. Fined 1*s.* and costs.—*Wolverhampton Chronicle.*

IRON SHIPBUILDING.—Mr. John Clare's model, which was at Lloyd's register-office, can now be seen by those interested in the iron trade at the Treasury, by application at the office. Yesterday he was favoured by an interview with Earl Granville, the Lord President of the Council, who is largely interested in the iron trade. Mr. Clare, by his perseverance, has placed his invention in high quarters, and it is true that now the merits of his vessel may be practically tested. If Mr. Clare's ship is not adapted for all the requirements of the carrying trade, architecturally considered, if his theory be correct, it ensures speed and safety.

DANGER SIGNALS FOR RAILWAY PASSENGERS.—Having read in the *Times* of the 12th and 16th inst. accounts of accidental fires in railway carriages, and very judicious observations thereon, calling for some efficient means for passengers under dangerous positions to communicate with the guard of the train, I beg to submit that a lamp, to carry a strong red light, might be so placed in each of the first-class carriages that it could be lighted and raised in an instant about a foot or so above and outside the roof of the carriage; the guard, whose duty it is to look out, would readily see the signal, and instantly communicate with the driver of the engine, from whom he should not be distant more than seven or eight yards. I have said the lamps should be improperly used: any other carriage, in which danger might happen, could easily communicate with a first-class carriage.—J. Norwood.

SUCCESSFUL FIRE-DOORS.—The Belgian Company's steamship *Princess Charlotte* (late Constitution), Capt. Pougin, went out of dock of Wednesday, and left Southampton on Thursday, for Cork; there to embark troops for India. This ship has undergone a complete overhaul, the whole of her engines and boilers being put in perfect order by Messrs. Summers and Day, of Northam; and among other improvements, Mr. Lee Stevens's regulating air-doors, for cooling the engine-room, preventing smoke, and increasing steam, and which have succeeded so well in the *Jocelyn*, and other steam-ships, have been fitted to the furnaces of the *Princess Charlotte*.—*Times.*

WEEKLY LIST OF NEW PATENTS.

GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.—W. Power, Rotherhithe: Steam-engine boiler furnaces and other furnaces for smoke prevention. J. Welch, Southall: Carriages and portable railways, to facilitate their movement on common roads and other surfaces. W. Henderson, Bristol: Treating certain ores and alloys, and in obtaining products therefore, and in recovering or reproducing all or part of the materials used. J. A. Molinoux, J. Nichols, Brighton: Pistons for steam-engine and other cylinders. A. Seydel, Paris: Employment of sulphur of carbon for motive purposes, and engines and apparatuses for applying and regenerating the same. G. Duncan, W. J. Jefferis, Littlefield-street, Birmingham: Smoke-consuming furnaces. E. Vignes, Baywater: Wrought-iron beams and girders. W. Knapp, Monkbar, York: Gasometers or gas holders, and in the application thereof to railway and other carriages, and ships, for lighting the same with gas. W. Gosage, Widnes: Sulphuric acid. T. Forster, Manchester: Metallic pistons. W. MacNaught, Roebdale, W. MacNaught, Manchester: Steam-engines. W. G. Clark, Gorton, Lancaster: Railway carriage and other wheels formed of cast metal, or having cast metal nave or hubs. J. Cockie, Liverpool: Heating or annealing wire, wire iron or rods, or sheets of iron, or other metals; and the manufacture of wire. G. Scott, Philadelphia, U.S., and 133, High Holborn: Steam-generators. W. H. Myers, Whitechapel: Signals on railways. F. Prestage, Westbury: Parcels of locomotives and other steam-boilers. W. Calvert, St. Paul's, London: Obtaining motive power by the action of the wind. J. Middleton, Hyde, W. Ryland, Whitefield, Manchester: Application of a certain metal or material to the manufacture of shuttles, bobbins, and tubes.

STEEL.—Mr. Bessemer is busily engaged maturing his proposed improvements in the manufacture of steel. We are informed that he is fully confident of producing steel, equal in quality to the best Swedish, at the rate of about 12*t.* to 1*s.* per ton. When that reduction in price is effected, it is proposed to use the material in constructing some steel ships of enormous tonnage.

MANUFACTURE OF IRON.—Mr. R. Talbot, Moxley, proposes to improve the furnaces used for puddling, annealing, and finishing iron. Instead of the ordinary arrangement of the parts of a puddling furnace he adopts the following:—The fire-place is situated nearly opposite to the opening at which the workman effects the puddling of the iron, while the opening at which the cinder passes out is situated on one side of the furnace instead of near where the workman operates. This arrangement is much less distressing to the workman than the ordinary arrangement. The annealing and finishing furnaces are combined in one, the parts being thus arranged:—The fire passes over a high bridge into a chamber constituting the annealing furnace; after passing along the roof of the said chamber, the fire descends and passes out at the bottom, it afterwards rises and passes over another high bridge into a second chamber, constituting the finishing furnace; from the bottom of the last-mentioned chamber the fire passes to the stock or chimney.

MANUFACTURE OF IRON AND STEEL.—Mr. W. Taylor, of How Wood, proposes in the manufacture of iron and steel to blow air into the molten metal, which is contained in a bowl made to revolve at a high velocity. This assists the purification and refining of iron, and prevents crystallisation.

MANUFACTURE OF IRON.—Mr. E. F. Jones, Redcar, has invented some improvements in the mode of heating the blast; and by heating the air between two concentric pipes, he obviates the necessity for the numerous bends existing in the ordinary apparatus.

PICKLING METALS.—Mr. R. Johnson, Manchester, to preserve iron and other metals from injury during the process of cleaning, preparatory to drawing, coating with other metals, or for other purposes, proposes to exclude the materials from the access of atmospheric air during their treatment with the acids or other substances used for effecting the required object. To this end he uses an air-tight vessel to receive the articles to be operated upon and the pickle solution, and from this vessel withdraws the air contained therein when thought desirable, or adopts other methods embodying the same principle of exclusion of air from the metallic surfaces.

GAS REGULATOR.—Mr. S. Wright, Halstead, proposes to improve upon existing gas regulators, by providing a chamber divided into two compartments by a flexible diaphragm, to which is fastened by a chain a flap which closes the inlet; as the pressure increases in the chamber, the inlet-flap is more and more closed, but upon the pressure lessening the flap falls, and the inlet-flap is opened.

PURIFICATION OF GAS.—Mr. H. R. Smith, of Wellingborough, employs a conical, vertical retort, to distribute the heat equally over the furnace; by this means, the whole of the gaseous products are converted.

STEAM-BOILERS.—Mr. S. L. Cotton, of Cotton End, Buds, has invented an arrangement for extending the heating surface of Cornish boilers, which consists in placing a water-chamber within the capacity of the flue. This chamber has suitable channels for communication, which communication is made by pipes easily removable. The water-chamber is placed concentric with the flue, and is sufficiently large to afford full room all round it.

CONDENSED STEAM.—Mr. T. Bowden, Pendleton, to discharge condensed steam, forms a box or chamber, having within it a fixed partition or diaphragm with two openings, to which openings two valves are applied, which are carried by a lever, one valve being attached at each end of the lever, the fulcrum of the lever being intermediate of the valves. The stem of one of the valves has on it a hollow globe or float, and to the lower end of the stem is attached another valve, suitable for closing the outlet from the chamber or box, such valve being pressed upwards by a spring, with a tendency to open it. When steam is admitted to one side of the diaphragm, it opens one of the valves, and presses the other valve, which is connected to the same stem, into its seat, so as to close the outlet passage. When an accumulation of water has taken place sufficient to raise the float, it will raise the outlet valve, and also the valve attached with its stem, the water will flow out at the outlet, and the valve at the other end of the lever will be opened, till the water allows the float to descend.

TILTING IRON AND STEEL.—Mr. G. W. Dyson, of Tinsley, near Sheffield, proposes to employ a new form of tilt hammer. The hammer head is attached to a frame, which is raised on two inclined planes, placed on a mitered iron wheel, which is actuated by another wheel, fixed upon the shaft.

WATER AS A MOTIVE POWER.—Mr. A. de Polignac has discovered a new system by which the power of a waterfall may be reduced to a considerable distance at a comparatively small expense. His machine consists of a lift and force pump, set in motion by the waterfall, and of a series of pipes of sufficient diameter conducting the water to the place where it is wanted; here it supplies a "Hungarian machine," and the water may then be allowed to run to waste, or be turned to some other useful purpose.

TERRESTRIAL MAGNETISM.—Prof. Neumeyer is at present causing a large amount of sensation in Australia, in consequence of the strenuous exertions he is making to obtain the assistance of the Colonial Government to erect an observatory, and grant 60*t.* a year to support it, on which conditions he engages to provide it with the necessary instruments, exceeding in value 200*t.* His proposition appears to be well received by the people, and in his address, after referring to the researches of Lieut. Maury and Dr. Scoresby, he holds out the greatest hopes of success.

RAILWAY BREAKS.—Mr. W. R. Jackson, of Baltimore, Maryland, has patented an invention, which consists of so arranging the actuating parts of the breaks, that while there is a drawing or backing force, the wheels are free to revolve, but immediately it ceases the breaks are applied.

RAILWAY CHAIRS AND SLEEPERS.—Mr. F. S. Hemming, Westminster, proposes to manufacture these and similar articles of substances not hitherto used. He mixes spent tan, spent hops, rags, paper, hair, old rope, woody fibre, peat, moss, grass, or other suitable animal or vegetable substances, in various proportions, so as to possess a good fibrous constitution; then subjects them to the rubbing or triturating action of rollers or other suitable machinery, so as completely to separate the fibres; then mixes it thoroughly with oil, or tar, or india-rubber, or gutta-percha, or any other gummy or cohesive substance; or forms a cohesive compound, by combining one or more of all these substances, and then mixes it with the fibrous compound. Mr. Hemming prefers to commence these at a high temperature, although that is not absolutely necessary; he prefers also at this stage, in order to render it more highly non-combustible, as well as to obviate the effects of dry rot in warm climates, to add a quantity of some of the metallic oxides or salts which are known to produce that effect.

The heated mass is then put into moulds of the proper form, and subjected to hydraulic or other great pressure; after standing for some time they are taken out of the moulds, and in some cases may be again exposed to a final heat to evaporate the superabundant moisture. In preparing the fibrous mixture for chairs it is preferable to wash out the earthy or putrescent particles, retaining only the fibre, so as to increase the consistency of the substance.

RAILWAY CHAIRS AND SLEEPERS.—Mr. F. S. Hemming, Westminster, proposes to fix horizontally and longitudinally a cylinder on the top of a tubular locomotive boiler—the cylinder being united to the boiler by vertical pipes. The horizontal top cylinder is used as a steam chamber, and the tube cylinder and fire-box of a locomotive can be kept almost full of water, so that the tubes and top of the fire-box remain covered with water, even in ascending or descending hills. In the universal railroad the wheels of the engine are placed within other wheels of larger diameter, so arranged that each wheel will run on the concave surface of a larger wheel, which is to form its railroad. The spokes of the large or railroad wheels are to be fixed to the rims of the wheels as close as they can be to the outside, leaving a sufficient breadth of rim from outside inwards to form the railroad on which the wheel of a locomotive engine for common roads, or for ploughing, carriages, omnibuses, wagons, carts, cannons, and all other description of carriages can run. The axle of each large wheel or circular railroad is to revolve in a box fixed to a frame placed on the outside of each large wheel forming the railroad. Two grooves are to be cut through each frame, one in the fore part and the other in the hind part. Two bolts are to be firmly fixed in locomotive or other carriage, as the case may be, for each frame. These bolts are to pass through the grooves, one for each groove, having a washer placed on the inside of each bolt to keep the railroad at a proper distance from the locomotive or loaded carriage, and a nut is to be screwed on the outward end of each bolt, to retain the frames and railroad wheels in their proper places. The grooves are to be left sufficiently long to permit the locomotive or loaded carriage to run forward or backward on the circular railroad, as required. To turn the carriages, fix a fixed axle inside from the fore axle of each wheel of a locomotive or other carriage, and to each inside frame two bolts are to be firmly secured, to retain the outside frames and railroad wheels in their proper places. Or the railroad may be made without the outside frames thus:—Form a circle of iron or a drum for each railroad wheel of sufficient breadth to permit each wheel of a locomotive or loaded carriage to run on the concave surface of its drum or circular railroad. A deep flange is to be fixed to the outside and another on the inside of each circular railroad, so as to prevent the wheels of a locomotive or loaded carriage from running off the circular railroad. To obviate slipping, when used by locomotive engines for common roads or for ploughing, the concave surfaces of the railway wheels are cogged, and the convex surfaces of the wheels of locomotives. Sometimes he lines the concave surfaces of the railroad wheels with wood. To simplify the plan, locomotives for common roads may work their driving-wheels on the circular railroad, and not the steering wheels. As soon as a locomotive or other carriage is set in motion, the weight resting on each wheel, driven or moved beyond the points of the circular railroad wheel touch the ground, will cause them to rotate in the line of the power; the heaviest roads, or even ploughed fields, can thus be travelled over with ease. To get rid of the opaque appearance of the steam of locomotive engines for common roads, he causes the exit steam to pass through bellows (one for each cylinder), which are to be as long as possible. These bellows are to be fixed to the cylinders in the smoke-box, to which a fan is to be attached, having suction pipes so placed as to draw the heated air proceeding from the fire-box of the boiler around the outside surface of the coiled pipe containing the exit steam. It is of importance, for the safety of passengers conveyed by steam carriages on common roads, that the engineer have a distinct view of the road as well as the passenger.

SLATE QUARRY.—An excellent SLATE QUARRY, of the best quality of slate, in Carnarvonshire, North Wales, in a very convenient spot, is to be DISPOSED OF.—Samples may be sent.—For further particulars, apply to Mr. Price Watkins, Post-office, Bethesda, near Bangor, Carnarvonshire, N.W.

THE FOREIGN VINEYARD ASSOCIATION (LIMITED).—Notice is hereby given, that the ORDINARY GENERAL MEETING of shareholders of this company will be HELD at the office of the company, No. 190, Regent-street, on Thursday, the 29th day of October instant, at One o'clock p.m. precisely.

By order of the Board,
THOS. W. STAPLETON, Sec.

TREDINNICK'S LIST OF PRICES OF BRITISH MINES, RAILWAYS, BANKS, &c.—published weekly, and forwarded by post at a charge of £1 1s. annually. Fluctuations in market value faithfully recorded, with Comments on the progress of Dividend and sound Progressive Mines.

Gresham House, Old Broad-street, London.

WEST END MINE AND QUARRY OFFICES, 5, WATERLOO PLACE, PALL MALL.

MESSRS. BRUNTON AND CO., ENGINEERS AND MINERAL SURVEYORS, undertake the MANAGEMENT and WORKING of MINES, QUARRIES, &c., and CONDUCT the LONDON AGENCY of all MINERAL PROPERTIES in their offices with system, economy, and regularity.

DEVON GREAT ELIZABETH COPPER MINE.

In 10,000 shares.—Deposit, £1 2s. per share. No free shares.

On the "Cost-book PRINCIPLE."

5000 shares have already been taken. 20 tons of ore are now at grass, raised from a depth of less than 3 fms. of the surface.

No steam power required, there being an abundant supply of water at all seasons from the River Dart.

Applications for the remaining shares to be addressed to Mr. NICHOLSON, 57, Old Broad-street, where prospectuses can be obtained, and reports from experienced agents, as well as specimens of the ore, may be seen.

RIVER TAMAR COPPER MINING COMPANY (LIMITED).

Capital £10,000, in 10,000 shares of £1 each.—Deposit 5s. per share.

Call not to exceed 5s., at intervals of not less than six months.

ALFRED SNEY, Esq., F.R.S.—CHAIRMAN.

OFFICES.—10A, KING'S ARMS YARD, MOORGATE STREET.

The mine is situated in a stratum of granite and killas, the former being exactly similar to the granite which yielded such great results at Gunnis Lake; and the latter being in every respect like that which has yielded such unprecedented returns at the Great Devon. The presence and junction of these two formations are highly favourable to good deposits of copper, and the mine is traversed by cross-courses, which appear to be necessary to the development of profitable copper mines. The character of the lode at the shaft is wider than the general run of granite lodes, which is also a promising feature, and it runs nearly vertical, which is also a further advantage. Gossan is found in the lode as low as the 53, a good indication of a deep and profitable mine; and, lastly, the kind of copper ore which is found in this lode is of the highest possible quality, so that the smallest quantities would be remunerative. In these peculiarities, every known circumstance which tends to great success exists, and at the present time a discovery of a remunerative deposit may be made at any moment.

Prospectus may be had on application to the office, as above.

INVESTMENT.—Messrs. FULLER and CO., 51, THREADNEEDLE STREET, LONDON, continue to TRANSACT BUSINESS IN BANKING, MINING, RAILWAY, and OTHER SECURITIES, many of which will safely pay from 15 to 25 per cent. Those of a progressive character frequently rising above 25 per cent.

Since calling public attention to several mines, a rise has taken place of the following:—Craddock Moor, from £35 to £45, equal to £10,550; Calstock Consols, £3 1/2, to £5 1/2, or £12,288; East Russell, from 10s. to 2s., or £6000; Wheal Edward, £4 to £9, being an increase of £50,480; Swanpool, £1 to £4, or £5400: total increase of value in four months, £54,718.

The following shares present equally as good prospects of success, and worth immediate attention:—

Dale (Limited). Lady Bertha.

Great Wheal Busy. Peter Tavy Consols.

Duke Walls. South Corn Brea.

Tonkenbury Consols. South Wheal Edward.

Wanted.—Alfred Consols, Botsallack, Dolcoath, Hindington Down, North Roscar, South Cadron, Wheal Margery, Edward, Ludeot, Tehidy.

UNITED STATES OF AMERICA.—DUPELLE, PERKINS, and SAYLES, BOSTON, MASSACHUSETTS, BROKERS for no PURCHASE and SALE of STATE, CITY, and RAILROAD SECURITIES, MANUFACTURING and BANK SHARES, give particular attention to the MINING COMPANIES OF LAKE SUPERIOR, and furnish reliable information concerning them. [Dupele, Perkins, and Sayles refer to the Editor of the *Mining Journal*.]

TO IRONMASTERS.—GAUNTLETT'S PATENT PYROMETER, OR HEAT GAUGE FOR HIGH TEMPERATURES.

Ever since the important invention of heated blast in the smelting of metallic ores was brought into general use, the want of an accurate and durable thermometer for indicating the heat of the blast has been generally experienced. That want is now supplied by this instrument.

Its ADVANTAGE consists in its capability of INDICATING HIGH TEMPERATURES beyond the reach of the ordinary mercurial thermometer. Its extreme sensitiveness, and the precision with which it registers high temperatures, renders it invaluable as an appendage to the heating stoves of blast furnaces. The fireman, if guided by its indications, is enabled to MAINTAIN A UNIFORM TEMPERATURE in the stove (an important matter in blast furnace operations), whereby a considerable saving of fuel may be effected, both in that used to heat the stove, as well as that which is consumed in the furnaces to smelt the minerals. These gauges are supplied only by W. J. LEDWARD, Middlesbrough-on-Tees.

Shortly will be published, a NEW GUIDE TO THE IRON TRADE; OR, MILL MANAGERS' AND STOCK TAKERS' ASSISTANT. Comprising a Series of New and comprehensive Tables, practically arranged, to show at one view the Weight of Iron required to produce Boiler Plates, Sheet Iron, Flat, Square, and Round Bars, as well as Hoop or Strip Iron of any dimensions. To which is added, a variety of Rules for the convenience of Merchants.

By JAMES ROSE, Bateman's Hill Ironworks, Bradley, near Elstree.

Just published, price 7s. 6d. THE WORKING OF THE STEAM-ENGINE EXPLAINED BY THE USE OF THE INDICATOR.

Being an Exposition of the Best Means of Producing the Greatest Effect from a given quantity of impulsive power, with the Least Expenditure of Fuel. With a Description of the Mode of Expanding Steam and the Compounding of Engines. By JOSEPH HOPKINSON, Jun.

Illustrated by Engravings and Diagrams. Second Edition, enlarged and improved. London: John Weale, 59, High Holborn; Manchester, Thomson and Son; Hud-der-bridge, B. Brown; Leeds, Newsome and Lennox.

On the 1st of November will be published No. I. of THE PICK AND GAD: A MONTHLY RECORD OF MINING, AND ITS ALLIED SCIENCES AND ARTS.

Conducted by WHITTON ARNOLD, Mining Engineer and Surveyor. 32 pp. royal 8vo., Illustrated with Seven Woodcuts, and a Coloured Geological Map of Cornwall and South Devon. Price Sixpence.

The object of the "PICK AND GAD" is to afford to the public generally, as well as to miners and those interested in mines, the best information, both practical and scientific, on the geology of mining districts and mineral veins; on the practical underground working of mines themselves; and on the various mechanical means used in their development. To which will be added a compact monthly summary of all home and foreign mining progress.

CONTENTS FOR NOVEMBER.

1. Mining Districts of Cornwall and South Devon. Part I. 2. The School of Mines, and its publications. 3. The Drainage of Mines. Part I. 4. Sussex Ironstone.

Reviews.—Hugh Miller's "Testimony of Rocks;" Phillips and Darlington's "Re-

cord of Mining." Monthly Summary of Mining, and its allied Sciences and Arts.

Price of Metal. Sales of Ore for the month.

London: Published at the office, 10, Henrietta-street, Covent-garden, W.C. Sold at the *Mining Journal* office, 26, Fleet-street.

INVESTMENTS IN BRITISH MINES.

Full particulars of the most important Dividend and Progressive Mines will be found in the Fourth Edition of

BRITISH MINES CONSIDERED AS AN INVESTMENT.

Recently published, by J. H. MURCHISON, Esq., F.G.S., F.R.S.

Pp. 356; price 3s. 6d., by post 4s.

Mr. Murchison also publishes a QUARTERLY REVIEW OF BRITISH MINING, giving, at the same time, the Position and Prospects of the Mines at the end of each Quarter, the Dividends Paid, &c. The Review for the Quarter ending the 30th of June, contains a Map of the Great Wheal Vor and Leant Mining Districts, price 1s. Reliable information and advice will at any time be given by Mr. Murchison, either personally or by letter, at his offices, 117, Bishopsgate-street Within, London, where copies of the above publications can be obtained.

OPINIONS OF THE PRESS.

Mr. Murchison's new work on British Mines is attracting a great deal of attention, and is considered a very useful publication, and calculated to considerably improve the position of home mine investments.—*Mining Journal*.

The book will be found extremely valuable.—*Observer*.

A valuable little book.—*Globe*.

Mr. Murchison takes sound views upon the important subject of his book, and has placed, for a small sum, within the reach of all persons contemplating making investments in mining shares that information which should prevent rash speculation and unproductive outlay of capital in mines.—*Morning Herald*.

Of special interest to persons having capital employed, or who may be desirous of investing in mines.—*Morning Chronicle*.

Of great value to capitalists.—*Sunderland Times*.

Parties requiring information on mining investments will find no better and safer instructor than Mr. Murchison.—*Leeds Times*.

As a guide for the investment of capital in mining operations is inestimable. One of the most valuable mining publications which has come under our notice, and contains more information than any other on the subject of which it treats.—*Derby Telegraph*.

To those who wish to invest capital in British mines, this work is of the first importance.—*Welshman*.

This work enables the capitalist to invest on sound principles; it is, in truth, an excellent guide.—*Plymouth Journal*.

All who have invested, or intend to invest, in mines, will do well to consult this very useful work.—*Plymouth Express*.

This is a really a practical work for the capitalist.—*Stockport Advertiser*.

Persons desirous to invest their capital in mining speculations, will find this work a very useful guide.—*Warrick Advertiser*.

It is full of carefully compiled and reliable information relative to all the known mines in the United Kingdom.—*Sheffield Free Press*.

Those interested in mining affairs, or who are desirous of becoming speculators, should obtain and carefully peruse the work.—*Monmouth Beacon*.

Every person connected, or who thinks of connecting himself with mining speculations, should possess himself of this book.—*North Wales Chronicle*.

A very valuable book.—*Cornwall Gazette*.

All who have invested, or intend to invest, in mines, should peruse this able work.

We believe a more useful publication, or one more to be depended on, cannot be found.—*Plymouth Herald*.

Mr. Murchison will be a safe and trustworthy guide, so far as British mines are concerned.—*Bath Express*.

Is deserving the attention of every one who seeks profitable investment of his capital.—*Brighton Examiner*.

NOTICE TO RAILWAY AND STEAM-BOAT TRAVELLERS.

—ANDERTON'S HOTEL, 162, 164, and 166, FLEET STREET. BREAKFAST, with joint, 1s. 6d. BEDS, 10s. 6d. per week. DINNERS from Twelve to Eight o'clock; joint and vegetable, 1s. 6d.; with soup or fish, 2s. TURTLE SOUP and VENISON DAILY. TABLE D'HOTE at Half-past One and Half-past Five, at Two shillings each. A night porter in attendance.

TO COAL PROPRIETORS, CONTRACTORS, AND OTHERS HAVING BRANCH LINES OF THEIR OWN.—TO BE SOLD, UPWARDS OF FORTY RAILWAY WAGONS.—Address, JAMES HINDLEY, 23, Moreton-street, Strangeways, Manchester, Manufacturer of Railway Wagon Covers, Air Sheetings, Brattice Cloth, Colliery Grease, Oil, &c.

MINING ENGINES FOR SALE, BY PRIVATE CONTRACT.—A CONDENSING WINDING ENGINE, 37 1/2 in. cylinder, 6 ft. stroke, 49-horse power.

HIGH-PRESSURE ENGINE, 10 in. cylinder, 18 in. stroke, 6 1/2-horse power, with boiler, 10 ft. long, 4 ft. diameter.

HIGH-PRESSURE WINDING ENGINE, 33 1/2 in. cylinder, 6 ft. stroke, 70-horse power, with framing.

CONDENSING WINDING ENGINE, 37 1/2 in. cylinder, 6 ft. stroke, 49-horse power.

HIGH-PRESSURE ENGINE, 9 in. cylinder, 3 ft. stroke, 4-horse power.

Also, a STAITH and DROPS at WallSEND.

For particulars, apply to Mr. JAMESON, at Bigges Main, near to WallSEND; or Mr. BROWN, auctioneer, Blackett-street, Newcastle-upon-Tyne. There is a direct communication with the North-Eastern Railway.

ON SALE, a BEAM CONDENSING PUMPING ENGINE, cylinder 60 in., stroke 7 ft.; it is in excellent condition.—For price, &c., apply to DAVID FOX, 15, Market-street, Manchester.

BOILERS AND PANS.—ON SALE, ONE 40 and TWO 45-horse

BOILERS, with two flues through; ONE 11-horse ditto, with one flue through;

ONE 12 and ONE 27-horse ditto, with egg ends; all in good working condition, and nearly equal to new. Also, THREE WROUGHT-IRON PANS, each 8 ft. diameter, by 8 ft. deep, suitable for kiers. NEW BOILERS MADE TO ORDER in 14 days, at reasonable prices.—Apply to J. FERNHILL and SONS, Victoria Works, Dukinfield.

BOILERS.—ON SALE, ONE TWO-FIFTY BOILER, 30 ft. long, by 7 ft. wide; ONE ditto, 37 ft. by 7 ft.; ONE ditto, 24 ft. by 7 ft.; ONE EGG-ENDED BOILER, 25 ft. by 5 ft.; ONE BOILER, 30 ft. by 7 ft., with one flue through.—Apply to DAVID FOX, 15, Market-street, Manchester.

NEW STEAM-ENGINE, BOILER, &c.—TO BE SOLD, a bargain, a NEW 30 in. cylinder DOUBLE ACTING STEAM-ENGINE, having a 9 ft. stroke, with a boiler weighing about 10 tons; also, a CRUSHER and 30 in. rolls; to be sold either together or separately, at the request of the parties ordering the same, and who are willing to make a sacrifice thereon.—Apply for particulars to Mr. BULLEN, at the Ironworks, Tavistock.

STEAM BOILERS MADE BY WILLIAM WILSON, LILY BANK BOILER WORKS, GLASGOW, on the most approved principles, and delivered in all parts of England at moderate rates.

STEAM PUMPS, FOR LAND AND MARINE PURPOSES, SINGLE or DOUBLE ACTING; sizes from 2 1/2 to 13 in. diameter, and from 15 in. to 30 in. stroke; by JOHN CAMERON. Used for feeding boilers, raising water for reservoirs, tanks, irrigation, &c., turning power, or as a steam fire engine. Works, Egerton-street, Huie, Manchester.

ELY VALLEY RAILWAY.—The DIRECTORS will MEET at the company's offices, Angel-street, Cardiff, on Friday, the 6th day of November next, at Three p.m., for the purpose of OPENING TENDERS for the CONSTRUCTION of the above RAILWAY.

The plans, sections, and specifications, may be inspected at the above-named offices, on and after the 26th October inst.; and sealed tenders, addressed to the directors, and endorsed "Tender for Works for the Ely Valley Railway," must be delivered at the above-named offices not later than the 3d day of November next.

Particulars tendering are requested to be in attendance. The directors do not bind themselves to accept the lowest, or any tender.

Dated Cardiff, Oct. 20, 1857.

COPIAPO AND CALDERA RAILWAY.—Notice is hereby given, that the QUARTERLY DIVIDEND of THREE AND A HALF PER CENT., declared in Copiapo on the 4th July, will be PAYABLE at the Banking-house of Messrs. Williams, Deacon, and Co., to the holders of the shares registered in England, on and after Thursday, the 22nd October.

By order, EDWARD J. COLE.

COPIAPO EXTENSION RAILWAY COMPANY.—At a MEETING of the shareholders, held at 2, New Broad-street, on Friday, the 16th day of October, 1857,

JOHN LABOUCHERE, Esq., in the chair.

The directors having reported that a satisfactory concession had been obtained from the Government of Chili, and that, owing to the measures taken by Mr. Wheelwright, the works on the line were in rapid progress,

It was resolved unanimously:—

That this meeting approves the course pursued by the directors, and authorises them to take immediate measures for the prosecution of the works, to apply the deposit towards that object, and to call for such further sums of money as may be required to complete the line at the earliest period.

That the thanks of this meeting be given to Mr. Edwards, for his valuable assistance in procuring the concession, and promoting the objects of the company in Chili.

That the thanks of this meeting are due to Mr. Wheelwright, for the energetic measures taken by him to expedite the early completion of the works.

JOHN LABOUCHERE, Chairman.

That the thanks of the meeting be given to the Chairman and directors, for the able manner in which they have conducted the affairs of the company.

EDWARD J. COLE, Sec.

COPIAPO EXTENSION RAILWAY COMPANY.—Notice is hereby given, that TWELVE MONTHS' INTEREST, at SIX PER CENT. per annum, will be PAYABLE on the deposit of £2 per share, on and after Monday, the 2d November next, at the office of the company, 2, New Broad-street.

The scrip must be left at the office, and the necessary form of application for the interest filled up, three clear days before the same can be paid.

By order of the Directors, EDWARD J. COLE, Sec.

126, Gresham House, Old Broad-street, E.C., Oct. 19, 1857.

REAT WESTERN RAILWAY OF CANADA.—Notice is hereby given, that the DIRECTORS of this company have made a CALL OF TWO POUNDS TEN SHILLINGS upon each and every share upon which there has been paid-up £1 10s. per share. Such call is payable at the London Joint Stock Bank, Princes-street, London, on or before the 1st December next.

By order,

PREVENT SMOKE AND INCREASE STEAM.—PATENT REGULATING AIR-DOOR, for MARINE and STATIONARY STEAM-BOILERS, and for LOCOMOTIVE and OTHER FURNACES.

CERTIFICATE FROM SIR ANTHONY ROTHSCHILD.

London, July 28, 1857.—The action of your Regulating Air-Doors at the Royal Mint Gold and Silver Refinery is very satisfactory as regards the smoke. They also get up steam in the boilers quicker and maintain it better than before; and they afford the means of raising or lowering the heat in the refinery furnaces as the work may require. Your invention, in fact, deserves every encouragement and recommendation.

J. Lee Stevens, Esq., 1, Fish-street-hill. Signed, A. ROTHSCHILD.

For further particulars respecting the Patent Regulating Air-Door, and the Patent Safety Marine Boiler; and with reference, also, to his Patent Land Furnaces, Domestic Stoves, and other inventions comprised in his System of Smoke Prevention, apply to Mr. JOHN LEE STEVENS, 1, Fish-street-hill, City, London (E.C.), where a great variety of models and drawings may be seen, and reports and testimonial obtainable.

OVERLAND ROUTE.—STEAM TO INDIA AND CHINA, &c., via EGYPT.—THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS AND RECEIVE GOODS AND PARCELS for the MEDITERRANEAN, EGYPT, ADEN, BOMBAY, CEYLON, MADRAS, CALCUTTA, THE STRAITS, and CHINA, by their steamers leaving Southampton on the 4th and 20th of every month.

For further particulars, apply at the company's office, No. 122, Leadenhall-street, London; and Oriental-place, Southampton.

THOS. GEMMELL & CO., WIRE ROPE MANUFACTURERS, WORKS, FIRHILL ROAD, SPRINGBANK, GLASGOW. WAREHOUSES—Finnieston Quay, Glasgow; 16, King-street, Liverpool; 43, Marischal-street, Aberdeen; 46, Osborn-street, Hull.

HENRY J. MORTON and Co., 2, Basinghall-buildings, Leeds, GEORGE OUTTER, Liverpool-road, Stoke-upon-Trent.

ISAAC NAYLOR, Didsbury, near Didsbury.

J. WADDINGTON, 109, Millgate, Wigan.

THOMAS REID, 23, Quayside, Newcastle-upon-Tyne.

PATENT WIRE ROPES, ONE-HALF THE COST OF HEMP ROPES.—HENRY J. MORTON AND CO.'S (No. 2, Basinghall-buildings, LEEDS) PATENT WIRE ROPES, for the use of MINES, COLLIERIES, RAILWAYS, &c.; one-half the weight of hemp rope, and one-third the cost; one-third the weight of chains, and one-half the cost—in all deep mines these advantages are self-evident. Reference to most of the principal colliery owners in the kingdom.

GALVANISED SIGNAL CORDS AND KNOCKER LINES; will not rust or corrode, and not affected by the copper water in mines. Very strong, and not at all liable to break. Prices from 1s. per 100 yards.

CHROGGON'S PATENT ASPHALTED ROOFING FELTS, 1d. per foot.

DRY HAIR BOILER FELTS, to SAVE COAL.

PATENT BOILER COMPOUND, for bad water.

BEARFANK'S WEIGHING MACHINES, of all sizes.

GALVANISED IRON ROOFING AND SPOUTING.

PATENT FLEXIBLE STEAM FACKING, 1s. 3d. per lb.

PATENT METALLIC PACKING, 4s. per lb.

PATENT AMERICAN DRIVING BANDS, much cheaper and more durable.

FLAX HOSE PIPES, for water, &c. (than leather).

PATENT GALVANISED AIR-PIPES, for ventilation.

STOCK of MINING and RAILWAY STORES in Liverpool and London:—viz. OILS, GREASES, COTTON WASTE, SPUN YARN, WHITE LEAD, VARNISHES &c.; and at very low prices. Address, 2, Basinghall-buildings, Leeds.

N.B. Illustrated price list on application.

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MOST IMPORTANT TO COLLIERY OWNERS AND COLLIERY MANAGERS.—HENRY J. MORTON AND CO., GALVANISED IRONWORKS, No. 2, Basinghall-buildings, LEEDS, beg to call attention to their IMPROVED SIGNAL BELL,

IMPROVED SIGNAL BELL.

BYRAM'S PATENT ANEMOMETER, for testing the ventilation.

Price 43 s. to £4 4s. each.

STEAM PRESSURE GAUGES, very strong and accurate, 2s and £2 12s. 6d. each.

For further information, apply to H. J. MORTON AND CO., 2, Basinghall-buildings, Leeds.

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FAIRBANK'S IMPROVED PATENT WEIGHING MACHINES for the use of IRONWORKS, COLLIERIES, RAILWAYS, WAREHOUSES &c. The most ACCURATE MACHINES in use, and the cheapest.

MACHINES of all sizes, from 1 cwt. to 30 tons, for RAILWAY WAGONS, CARTS, &c. WAGONS.—For prices and all other information, apply to HENRY J. MORTON AND CO., Galvanised Ironworks, 2, Basinghall-buildings, Leeds.

Crofton's Patent Asphalted Roofing Felts, Boiler Felts, Galvanised Iron, &c., in Stock.

520

PATENT COMBINED GAS WORKS, of all sizes, for the use of PRIVATE HOUSES, MANSIONS, RAILWAY STATIONS, MILLS, COLLIERIES, VILLAGES, &c., FIXED COMPLETE, with greatly improved means for purifying, &c. Works of all sizes, from 10 lights to 500 lights, estimated for The construction is so simple, that the works can be entrusted to the management of an ordinary labourer or servant.

Apply to H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall-buildings.

SOLE LICENSEES AND AGENTS.

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TO ENGINEERS, RAILWAY COMPANIES, STEAM PACKET COMPANIES, COLLIERY OWNERS, MILL OWNERS, &c.—WARNE'S IMPROVED ANGLO-AMERICAN FLEXIBLE CANVAS, and MINERALISED INDIA RUBBER PACKING for STEAM JOINTS, PUMP CLACKS, VALVES, &c.

The attention of all using steam-power is called to this elastic packing, possessing advantages which renders it the cheapest in use. Reducing friction, saving time and labour, and lasting as many months as hemp or spun yarn will weeks. Price 1s. 4d. per pound, carriage paid.

Also, MINERALISED INDIA RUBBER HOSE PIPES, TUBINGS, MILL BANDS, and WASHERS. The attention of engineers, mill owners, machine makers, brewers, and others, is called to the above improved hose pipes and machine belting or mill bands, the important advantages of which, as regards durability, efficiency, and cheapness, are too well known and appreciated to need comment.

For lists of prices, apply to the agents, HENRY J. MORTON AND CO., Galvanised Ironworks, 2, Basinghall-buildings, Leeds.

INDIA RUBBER WASHERS for JOINTS for steam, water, and gas, of all sizes.

ARNOLD AND SONS, WIRE WORKERS, WEAVERS, AND IRONMONGERS TO HER MAJESTY.

No. 9, 12, and 15, FORE STREET, DEVONPORT, DEVON.

Arnold and Sons being MANUFACTURERS of WIRE WORK, can with confidence assure the strongest and best quality goods to all who entrust orders to their care.

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Our BANDS, carefully MANUFACTURED from the VERY BEST GUTTA PERCHA only, are considerably CHEAPER, and, when fairly worked, are far more DURABLE than LEATHER. Can be had in lengths of 100 or 120 ft. without a joint, are easily joined or repaired, and are, when worn out, re-purchased by us at about one-third of their original cost. In the event of a break down, a band of any size can be supplied within a few hours of receipt of order. The present prices are as under:—

Bands $\frac{1}{2}$ in. thick and upwards to $\frac{1}{2}$ in. ... 2s. 6d. per lb.

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Subject to a liberal discount for cash, varying according to quantity. TUBING and other articles equally low. All our patented manufactures are to be obtained wholly from our own works; retail from any of our dealers.

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THE MINING SHARE LIST.

Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.	Shares.	Paid.	Last Price.	Present.	Shares.	Paid.	Last Price.	Present.	
5120 Alfred Consols (cop.), Philstock [S.E.] 21. 11s. 10d.	12 1/2%	13s 14 1/2	—	217 17 0	20 4 0—Oct. 5, 1857.	6144 East Cardigan (copper).....	2 1/2	3 1/2	—	6144 East Cardigan (copper).....	2 1/2	3 1/2	—	
1634 Ballewadden (tin), St. Just	11 1/2	4	—	12 5 0	0 5 0—Jan. 1, 1854.	6100 East Cornwall Cons. (tin & cop.)	1 1/2	2 1/2	—	12000 Redmoor (copper and tin)	1 1/2	2 1/2	—	
4500 Bedford United (copper), Tavistock	21. 6s. 3d.	6 1/2	—	87 7 1/2	9 11 6	4 0 0—Aug. 27, 1857.	6090 East Fowey Consols	1 1/2	2 1/2	—	10000 Rheidal United Mine	2 1/2	3 1/2	—
249 Boscaran (tin), St. Just	20 1/2	—	65 60	21 0 0	3 0 0—Sept. 4, 1857.	4096 East Gornemans (copper)	1 1/2	2 1/2	—	1024 Rosewarne and Herland United	2 1/2	3 1/2	—	
500 Botallack (tin, copper), St. Just	91 1/2	270	250 200	110 5 0	5 0 0—Aug. 18, 1857.	5000 East Header (copper), Crown	1 1/2	2 1/2	—	4996 Rosewarne Consols	2 1/2	3 1/2	—	
1200 Brightside and Froggatt Grove, Derbyshire	3	—	1 1/2	1 1/2	—	6000 East Kitt Hill (tin)	1 1/2	2 1/2	—	5000 Round Hill (silver-lead), Salop	1 1/2	2 1/2	—	
160 Bryntord Hall (lead), Flint	30	—	50	18 0 0	5 0 0—Mar. 26, 1857.	6000 East Providence (tin), Ury Lea	1 1/2	2 1/2	—	5250 Silver Brook, Ashburton	2 1/2	3 1/2	—	
1000 Bryantall, Llanidloes, Montgomeryshire	7 1/2	—	2	1 1/2	0 5 0—July 1, 1856.	6000 East Rosewarne (tin, tin), Gwinear	2 1/2	3 1/2	—	1024 Silver Valley, Truro	2 1/2	3 1/2	—	
430 Budnick Consols (tin), Perran	3 1/2	—	6	—	0 10 0	0 10 0—Mar. 26, 1857.	6000 East Rosewarne (tin), Crown	1 1/2	2 1/2	—	4000 Sithney Wheel Buller (tin)	4	5	—
6000 Bwlch (silver-lead), Cardiganshire	31. 1s. 6d.	1	—	0 2 6	0 2 6—July 30, 1856.	12000 Sortridge & Bedford, Tavistock	1s. 10d.	—	—	12000 Sortridge & Bedford, Tavistock	1s. 10d.	—	—	
1000 Carn Brea (copper, tin), Illogan	15	45	45 50	235 10 0	2 0 0—May 22, 1857.	6100 South Bullerard W. Penetratul	—	—	—	6000 South Carn Bras (cop.), Camb.	1s. 4d.	—	—	
2048 Carnorth (tin), St. Just	4 1/2	5 1/2	6	—	0 15 0	0 3 0—June 16, 1856.	12000 South Clifford United, Gwennap	—	—	—	6000 South Clifford United, Gwennap	—	—	—
200 Cefn Cwm Brywyn (lead), Cardiganshire	33	55	42	3 0 0	3 0 0—Oct. 4, 1855.	1000 East Tafarn (sil.-ld.), Heverford	21s 14 6	—	—	119 East Wheal Agar	67	10	—	
2000 Coliacombe (copper)	5	—	23	18 17	—	119 East Wheal Agar	67	10	—	3502 South Cremer (copper)	—	—	—	
234 Condurrow (copper, tin), Camborne [S.E.]	20	110	110 115	85 0 0	2 0 0—June 10, 1857.	10000 East Wheal Clifford (cop.), Bea	2 1/2	3 1/2	—	6000 South Cudliffe (copper)	—	—	—	
1053 Croddick Moor (copper), St. Cleer	8	42 1/2	40	0 5 0	0 5 0—Sept. 11, 1857.	10000 East Wheal Robert (copper)	1 1/2	2 1/2	—	256 South Garrison, St. Clement	26	45	—	
3000 Craven Moor, Limited (lead), Yorkshire	1 1/2	—	—	—	10000 East Wheal Russell, Tavistock	2 1/2	3 1/2	—	5000 South Gisland	5	—	—		
128 Cwmystwyth (lead), Cardiganshire	60	140	150	95 0 0	5 0 0—Aug. 20, 1857.	4000 Fox Donald (lead)	4s. 6d.	—	—	6000 South Hington (tin), Calstock	2 1/2	4	—	
280 Derwent Mines (silver-lead), Durham	300	150	150	122 0 0	10 0 0—June 25, 1857.	5000 Fox Alverny (t. & c.), Limit.	5	—	—	1024 South Lady Bertha (copper)	—	—	—	
1024 Devon Great Consols (cop.), Tavistock [S.E.]	1	450	440 450	387 0 0	9 0 0—Sept. 24, 1857.	5000 Frank Mills, Tiverton	2 1/2	3 1/2	—	1024 South Providence (tin), Sithney	2 1/2	3 1/2	—	
673 Ding Dong (tin), Guisval	32	25	30 25	16 7 0	1 10 0—Mar. 2, 1857.	5000 Fox Donald (lead)	—	—	—	1165 So. Wh. Croft (cop.), Illogan	2 1/2	3 1/2	—	
179 Doleath (copper, tin), Camborne	25 1/2	310	310 320	94 0 0	8 0 0—Oct. 12, 1857.	5000 Fox Gallyr-Prieth-Rhydlyn (Limited)	3	—	—	1165 So. Wh. Ellen (cop.), St. Agnes	2 1/2	3 1/2	—	
12800 Drake Walls (tin, copper), Calstock	17. 1s. 6d.	2	2 1/2	0 18 0	0 2 0—Sept. 11, 1857.	5000 Garret (lead), Flint	—	—	—	6000 South Wheal Wrey	1s. 6d.	—	—	
300 East Daren (lead), Cardiganshire	32	100	100	33 0 0	3 0 0—Oct. 15, 1857.	4000 Gawton (copper), Tavistock	3 1/2	4 1/2	—	1024 South Astell Consols	—	—	—	
2048 East Falmouth (lead)	2	2 1/2	2 1/2	0 5 0	0 2 0—Sept. 19, 1857.	5000 Gellirbeiron (sil.-ld.), Cardigan	—	—	—	2520 Stray Park	—	—	—	
128 East Pool (tin, copper), Pool, Illogan*	34 1/2	340	340	290 0 0	2 10 0—Aug. 21, 1856.	6000 Gellirbeiron (sil.-ld.), Cardigan	—	—	—	1500 Swanscombe, Budeock	—	—	—	
1624 Great South Tonquin [S.E.]	2 1/2	10	3 1/2 4	0 5 0	0 5 0—Jan. 11, 1854.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	2000 Tavistock (cop.), near Tavistock	2 1/2	3 1/2	—	
8700 Exmouth (silver-lead)	41. 1s. 6d.	8	—	3 5 0	0 4 0—Oct. 28, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	10000 Tokenbury Consols, Linkerd	2 1/2	3 1/2	—	
1400 Eyan Mining Company (lead), Derbyshire	5	60	59 61	15 18 4	1 0 0—Oct. 8, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	6000 Tolvaider, Marasian	—	—	—	
4910 Fowy Consols (copper), Tywardreath	4	7	7	41 4 3	0 6 0—Feb. 17, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
4448 General Mining Co. for Ireland (cop., lead)	3 1/2	2 1/2	2 1/2	1 0 8	0 3 3—June 5, 1853.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
2000 Goginan (silver-lead), Cardiganshire	7 1/2	—	—	22 0 0	0 5 0—Sept. 5, 1850.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
1024 Gornemans (copper), St. Cleer	13 1/2	15	10 12	0 7 6	0 7 6—Dec. 31, 1852.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
243 Grambler and St. Aubyn (copper)	100 1/2	80	80 85	4 0 0	2 0 0—July 7, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
6000 Great South Tonquin [S.E.]	2 1/2	16 18 1/2	1 4 6	0 5 0	0 5 0—Oct. 22, 1855.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
26600 Great Wheal Vor (tin, cop.), Helston [S.E.]	7 1/2	2 1/2	3 1/2	0 18 0	0 2 0—Sept. 11, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
119 Great Work (tin), Germoe	100	140	140	231 10 0	7 10 0—Feb. 27, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
1024 Herodsfoot (lead), near Liskeard	8 1/2	7 1/2	7 1/2 8	3 2 0	0 10 0—Sept. 23, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
2000 Hingston Down Consols (copper), Calstock	3 1/2	6 1/2	5 1/2 3	2 1/2 3	0 2 0—Nov. 25, 1856.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
2000 Hollyford (copper), near Tipperary	11	8 1/2	8 1/2	0 5 0	0 5 0—Jan. 28, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
2580 Isle of Man (Limited)	25	42	—	54 17 3	1 0 0—Sept. 3, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
76 Jamaica (lead), Mold, Flintshire	31. 1s. 6d.	—	—	380 0 0	5 0 0—Mar. 10, 1851.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
2000 Layex Mining Company, Isle of Man	100	140	140	231 10 0	7 10 0—Feb. 27, 1857.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
150 Levant (copper, tin), St. Just	3 1/2	9	90 95	1062 0 0	4 0 0—Dec. 20, 1855.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
5000 Lewis Mines (tin, copper), Llanfairfechan, Wales	18 1/2	3 1/2	3 1/2 8	0 10 0	0 10 0—Dec. 20, 1855.	10000 Great Consols (cop.), Tavistock	2 1/2	3 1/2	—	1014 Trebarhan, Perranthonnoe	—	—	—	
4000 Lisburne (lead), Cardigan	31. 1s. 6d.	120	120											